ORDER NO. VSD9304M503

Service Manual

Panasonic MII

PORTABLE VTR

AU-55HE

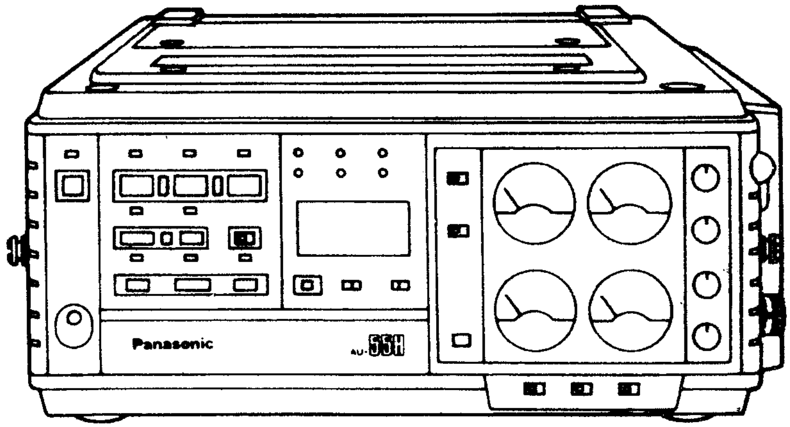
Sec. 1 *Operating Instructions*

Sec. 2 *Maintenance & Mechanical Adjustment Procedures*

Sec. 3 *Electrical Adjustment Procedures*

Sec. 4 *Block Diagrams, Schematic Diagrams & Circuit Board Diagrams*

Sec. 5 *Exploded Views & Replacement Parts List*



PAL

Panasonic

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service the Panasonic Potable VTR model AU-55.

This service manual includes the following sections.

Section 1	Operating Instructions
Section 2	Maintenance / Mechanical Adjustment Procedures
Section 3	Electrical Adjustment Procedures
Section 4	Block / Schematic / Circuit Board Diagrams
Section 5	Exploded Views / Replacement Parts Lists

If the part or circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original manual.

SECTION 1

OPERATING INSTRUCTIONS GENERAL DESCRIPTIONS

This operating instruction section is just an over-view.
Detailed procedures are supplied in operating instructions for the AU-55H.

CONTENTS

OPERATING INSTRUCTIONS

SPECIFICATIONS 1-1
FEATURES 1-2
FRONT PANEL 1-3
SIDE PANEL 1-4
LOWER PANEL 1-5
POWER SUPPLY 1-6
CONNECTION 1-8
WARNING LAMP 1-9
EMERGENCY EJECT 1-9
PRINTED CIRCUIT BOARD (SWITCH SETTING) 1-10
CONNECTORS PIN SIGNAL 1-11
PRECAUTION FOR HANDLING UNIT 1-11

TECHNICAL DESCRIPTION

1. INTRODUCTION 1-12
2. M II FORMAT VTR 1-13
3. RECORDING & PLAYBACK PROCESS 1-15
4. SYSTEM APPLICATION 1-19
5. TAPE TRANSPORT SYSTEM 1-20
6. WIDE SCREEN 16:9 RATIO VIDEO 1-20
7. COLOR SIGNAL CHECK FUNCTION 1-22

Specifications

General

Power Supply:	DC 12 V+5/−1 V
Power Consumption:	17 W (recording in SAVE mode)/28 W (recording in EE • PB mode) MAX. 65 W with camera

▨ is the safety information.

Recording System:	MII format, 4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Partical (MP) Tape
Recording Time:	97 minutes (with AU-M90L)
FF/REW Time:	Less than 6 minutes (with AU-M90L)
Operating Temperature:	0°C–40°C (32°F–104°F)
Operating Humidity:	Less than 85%
Dimensions:	283 mm (W)×127 mm (H)×334 mm (D) 11⅛″×5″×13⅛″
Weight:	6.7 kg (14.7 lbs) without cassette and battery

Video

Television Format:	PAL; 625 lines, 50 fields
Modulation System:	Y; Frequency modulation C (P_B/P_R); Time compressed multiplexing
Bandwidth:	Y; 25 Hz–5.0 MHz (+1.0/−2.0 dB) 5.5 MHz (−3.5 dB) C (P_B/P_R); 25 Hz–1.8 MHz (+1.0/−2.0 dB) 2.0 MHz (−3.5 dB)
S/N Ratio:	Y; Component: Better than 47 dB Composite: Better than 45 dB (SC TRAP ON) C; AM: Better than 48 dB PM: Better than 50 dB
Y/C Delay:	Less than 20 ns
K Factor:	Less than 2%

Audio

Linear (CH1/CH2)	
Frequency Response:	50 Hz–15 kHz (+2.0/−3.0 dB)
S/N Ratio (at 3% distortion):	Better than 54 dB (Dolby NR OFF)
Distortion:	Less than 1% (at 1 kHz standard input level)
Erase:	Less than −65 dB
Wow and Flutter:	Less than 0.15% (DIN WTD)
Cross Talk:	Less than −55 dB (at 1 kHz standard input level)
FM (CH3/CH4)	
Frequency Response:	20 Hz–20 kHz (+1.0/−2.0 dB)
Dynamic Range:	More than 80 dB (A curve WTD)
Distortion:	Less than 0.5% (at 1 kHz standard input level)
Cross Talk:	Less than −65 dB (at 1 kHz standard input level)

Video Input Signal

VIDEO IN:	BNC×1, 1.0 Vp-p, 75Ω
CAMERA IN:	26 P Multiconnector VIDEO IN; 1.0 Vp-p, 75Ω Y IN; 1.0 Vp-p, 75Ω P_B IN; 0.7 Vp-p, 75Ω P_R IN; 0.7 Vp-p, 75Ω RETURN VIDEO; 1.0 Vp-p, 75Ω

(Condition: 100% colour bar, with 0% set up)

Audio Input Signal

AUDIO IN:	XLR3P×4 CH1, CH2 (Linear)/CH3, CH4 (FM)
CAM/LINE:	LINE; 0/−20/−60 dBu (Switchable) 10 kΩ (0/−20 dBu)/3 kΩ (−60 dBu) balanced CAM; −60 dBu, 3 kΩ, balanced
TIME CODE IN:	BNC×1, 0.5 Vp-p–8.0 Vp-p, high impedance

Video Output Signal

VIDEO OUT:	BNC×2 VIDEO OUT 1, 2; Composite out, 1.0 Vp-p, 75Ω
COMPONENT OUT:	BNC×3 Y; 1.0 Vp-p, 75Ω P_B; 0.7 Vp-p, 75Ω P_R; 0.7 Vp-p, 75Ω
YC (S1 VIDEO) OUT:	S1 VIDEO (4P)×1 Y; 1.0 Vp-p, 75Ω C; 0.3 Vp-p (burst level), 75Ω

(Condition: 100% colour bar, with 0% set up)

Audio Output Signal

AUDIO OUT:	XLR3P×2, CH1/CH3, CH2/CH4 0/−20 dBu (switchable), 50Ω, balanced
TIME CODE OUT:	BNC×1 2.2 Vp-p±3 dB, low impedance
HEADPHONES:	¼″ phone stereo jack −∞ to −18 dBu, 8Ω

Standard Accessory

Shoulder Strap:	1 (VFC0089)

Option

Carrying Case:	AU-H500

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Features

The AU-55H Portable Video Cassette Recorder is compact, light weight and extremely simple to operate. It can be widely used with other MII series system equipments.
Moreover, this unit is generated with a TBC, therefore, it can be used not only as a portable VTR but also as a studio-use simple playback VTR or a source VTR for simple editing systems.

■ High quality picture
Even though the AU-55H employs a ½" metal tape, the excellent quality of the pictures it records is on a par with that produced by a 1" VTR.

■ Compact, light weight portable VTR
AU-55H has succeeded in reducing the weight inclusive of the batteries and cassette with a compact design. These features go hand in hand with the low power consumption to make this portable VTR invaluable in a wide range of applications as an extremely mobile and versatile unit.

■ 97 minutes of continuous recording is available.

■ Low power consumption mode
This unit has a SAVE mode which supplies electric power only to the necessary part of the circuit when recording is taking place, thus minimizing drain on the battery.

■ Three types of video output connectors
This unit has a 2-channel video output (one of which has a time code superimpose on it), a YC (S1 VIDEO) output (4P) and a Y, P_B and P_R component output (BNC×3), enabling it to be used in a wide range of systems.

■ Built-in video AGC (Automatic Gain Control) circuit
The video level can be adjusted at optimum level, and can be recorded at minimal distortion even with sudden and excessively high input levels.

■ Built-in audio AGC circuit
This unit employs an audio AGC circuit which automatically maintains the audio at an optimum level. During manual operation as well, a limiter circuit operates when the input level is high, ensuring distortion-free recording.

■ Built-in TBC (Time Base Corrector)
This unit contains a TBC, hence it can provide a stable, beautiful playback picture without transverse shaking or colour smearing. The TBC correction range is 32 Hp-p, ensuring a signification reduction of jitter.

■ Internal time code generator/reader
The internal time code generator allows the SMPTE time code to be recorded simultaneously with the video and audio signals. Moreover, an LTC (Longitudinal Time Code) can be recorded onto a track intended exclusively for recording a time code, and simultaneously a VITC (Vertical Interval Time Code) can be recorded on two lines during the vertical blanking intervals. The time code reader enables the time codes to be reproduced and read when the unit is set to the playback mode.

■ Time code slave lock
The internal time code generator can be locked to an external generator.

■ 4-channel audio recording (2 linear channels and 2 FM channels)

■ Dolby NR system
A Dolby* C Noise Reduction System is featured for the linear audio signals. It can be switched ON and OFF as required.

*Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
*"Dolby" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

■ Audio dubbing
Sound can be added to pre-recorded tapes by recording on the linear audio channel.

■ Colour check function
The CMPNT•BATT CHECK button enables the colour components of the recording or playback signals to be checked with a black and white viewfinder. At the same time, the recording Y, P_B and P_R signal components are indicated on the meters.

■ REC REVIEW function
This function plays back the part of the tape immediately prior to the end of recording to enable the head to be checked for clogging during recording. The playback range can also be set manually.

■ Extremely precise recording continuity
A new servo system makes sure that recordings can be carried out without disturbing the flow of the pictures which have been recorded in sequence.

■ Prevention of erroneous operation
The unit is designed so that while recording none of the function buttons except STOP and PAUSE/STILL can be operated. If the KEY INHIBIT switch is set to ON, none of the function buttons will work at all.

■ Built-in phantom microphone power supply

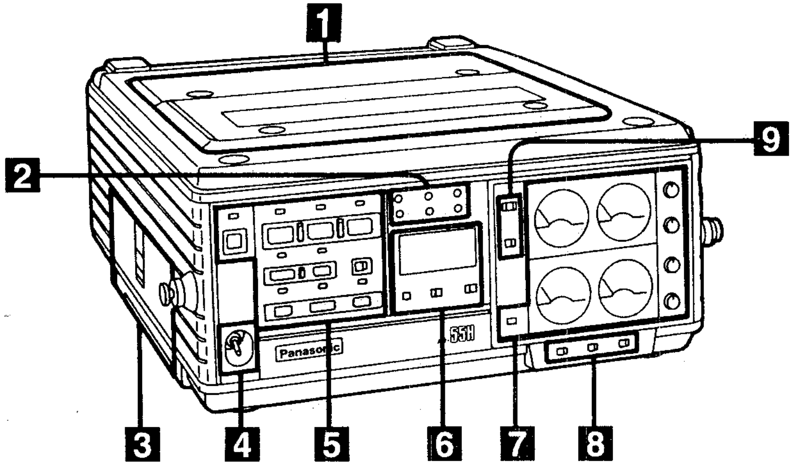
■ Search function
Playback pictures (in colour) can be viewed in both the forward and reverse directions at a speed approximately equivalent to 5 times the normal tape speed.

■ Automatic cleaning function
The control and time code heads are cleaned automatically when a tape is loaded and unloaded.

■ Warning system
This unit has a system based on an array of indicator lamps and beeps which warn the operator of tape-end, tape wind-up, servo system malfunctioning, dew condensation, battery charge depletion and head clogging.

■ Remote control
A 9P connector for RS-422A serial control can be hooked up to the AU-55H so that it will function as a source unit.

Front panel



1 Cassette section (upper panel)

Cassette holder:	Insert the tape here. Both standard and small cassettes can be used.

2 Warning lamp section

BATT lamp:	Flashes when the battery pack being used is becoming depleted.
HUMID lamp:	Lights up when dew has formed. In any other mode except recording, the unit is placed in the stop mode.
SERVO lamp:	Lights up when the drum servo or capstan servo is not locked.
END lamp:	Flashes when the tape is near the tape end during recording.
SLACK lamp:	Lights up when slack causes in the tape transport system or the drum stops rotating.
RF lamp:	Lights up when recording has not been conducted because the video heads were clogged or the recording circuitry were malfunctioned.

3 Battery section (side panel)

Battery compartment:	Insert one AU-BP402 battery pack or two AU-BP220 packs.

4 Power section

POWER switch:	Switches the power on and off. When camera is connected to the CAMERA IN connector, power will also be supplied to the camera.

5 Basic operation section

EJECT lamp/button:	When pressed, the cassette holder rises and a cassette can be inserted or removed.
STOP lamp/button:	When pressed, the lamp lights and the tape stops.
PLAY lamp/button:	When pressed, the tape plays back.
REC lamp/button:	When pressed together with the PLAY button, the lamp lights and recording starts. When pressed while the tape has stopped, the E-E mode pictures and sound can be monitored.
PAUSE/STILL lamp/button:	When pressed, the lamp lights and the tape being recorded or played back stops temporarily.
AUDIO DUB lamp/button:	When pressed together with the PLAY button, sound can be added and dubbed on the recorded tape.
KEY INHIBIT switch:	Inhibits the button operations to prevent from being pressed in error and the unit transferred to another operational mode.
REW (REC REVIEW) lamp/button:	When pressed, the lamp lights and the tape rewinds. When pressed in REC PAUSE mode, it is possible to verify whether what is contained on the tape immediately before has been recorded.
SEARCH lamp/button:	When pressed, the lamp lights and colour pictures can be viewed at about 5 times normal speed. Press the REW or FF button during this lamp is on or press this button during REW or FF mode.
FF lamp/button:	When pressed, the lamp lights and the tape is fast forward.

6 Display section

Display:	Displays the control track time, time code, user bits, hour meter or battery capacity information.
RESET button:	When the control signal is displayed, the value is reset to zero. When time code is displayed, time code generator value is reset by pressing simultaneously with the SHIFT button.
DISP switch:	Selects whether to display the control signal information or the time code information.
LIGHT switch:	Illuminates the display and the level meters.

7 Level control section

CMPNT • BATT CHECK button:	By pressing this button, the picture in the viewfinder switches over to the CTCM signal, the indications on the CH1, CH2 and CH3 meters to the component Y, P_B and P_R during recording, and the indication on the CH4/VIDEO • TRACKING meter to the battery capacity.
Level meters:	Indicates the recording/playback level of audio CH1 to CH4 and the video recording input level/tracking level.
CH1 to CH4 controls:	Used to adjust the recording level by manual.

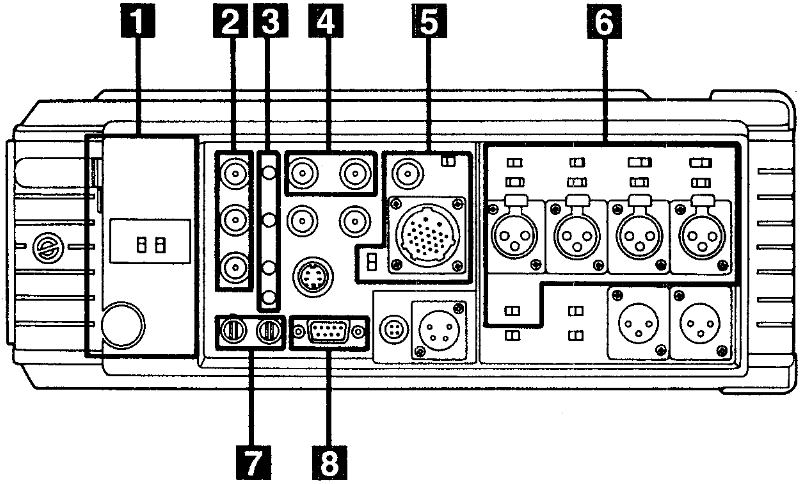
8 Audio control section

DOLBY NR switch:	Selects ON/OFF of the Dolby NR system.
CH1 • CH2 switch:	Selects automatic/manual to adjust the audio CH1 and CH2 levels.
METER SELECT switch:	Selects the meter display of CH4/VIDEO • TRACKING meter.

9 Mode • colour framing section

MODE switch:	**SAVE;**	This is a power saving mode. It is used mainly when recording while running the VTR by the battery pack(s).
	EE • PB;	This mode is used mainly when recording while running the VTR by the AC adaptor.
	PB;	This mode is used mainly when the VTR is used as a source unit.
CF switch:	Selects whether or not to synchronize playback signals with the colour framing of the REF signal.	

Side panel



1 Audio monitor section

HEADPHONES jack:	Connect the stereo headphones for sound monitoring.
AUDIO MONITOR switch:	Selects the audio monitor output signal.
MONITOR LEVEL control:	Adjusts the sound level supplied to the HEADPHONES jack.

2 Component output connector section

COMPONENT OUT connector:	Outputs the separated component signals (Y, P_B, P_R).

3 Encoder output control section

VIDEO LEVEL control:	Adjusts the output level of the video signals (composite).
SYNC PHASE control:	To achieve gen-lock, this adjusts the H phase of the built-in sync generator with respect to the reference sync signal supplied from an external source.
SC FINE/SC COARSE control:	To achieve gen-lock, these adjust the internal SC phase with respect to the reference SC signal supplied from an external source. The COARSE control has 4 steps of 90° each and the FINE control has continuous across a range just over 90° and totally covers 360°.

4 Time code connector section

TC IN connector:	To record time code from an external time code generator.
TC OUT connector:	This is the output connector for the time code.

5 Video input section

VIDEO IN connector:	Connects to the composite video output connector of a camera or VTR composite video output signal.
VIDEO INPUT switch:	Selects the video input signals (VIDEO IN or CAMERA IN) to be recorded.
CAMERA IN connector:	Connects to the 26P multi-connector on the video camera.
COMPONENT/YC/COMPOSITE switch:	Select in accordance with the type of video camera connected to the CAMERA IN connector.

6 Audio input section

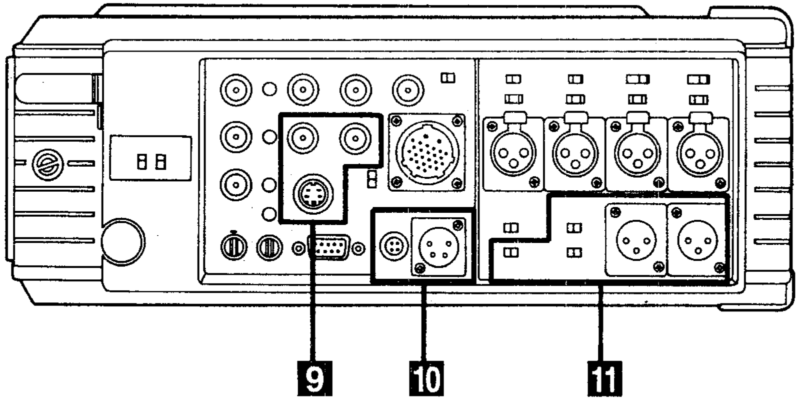
CH1, CH2 switch:	Selects the audio signal to be recorded onto the linear track. **LINE;** Records the signals connected to the AUDIO IN CH1, CH2 connectors. **CAM;** Records the signal connected to the CAMERA IN connector.
CH3, CH4 switch:	Selects the audio signal to be recorded onto the FM track. **LINE;** Records the signals connected to the AUDIO IN CH3 and CH4 connectors. **CH1;** Records the CH1 signal simultaneously onto the CH3 track. **CH2;** Records the CH2 signal simultaneously onto the CH4 track.
AUDIO IN level switch:	Selects −60 dBu, −20 dBu, 0 dBu in line with the level of the signals supplied to the AUDIO IN CH1, CH2, CH3, CH4 connectors.
CH1–CH4 connectors:	These are audio signal input connectors (XLR 3P).
PHANTOM (48 V) switch:	Set to "ON" when a phantom microphone is connected to the AUDIO IN CH1 and CH2 connectors. However, this is available only when the AUDIO IN level switch is set to "−60 dBu".

7 Control section

VIDEO IN LEVEL control:	Adjusts the recording level of the composite video signals supplied from the VIDEO IN and CAMERA IN connectors. Adjust this control so that the VIDEO TRACKING meter pointer deflects into the blue area.
TRACKING control:	Adjusts any tracking deviation generated when a pre-recorded tape is played back. Normally, keep it at its centre position.

8 Remote connector section

REMOTE connector (9P):	Used to remotely operate the unit using RS-422A serial data.



9 Video output connector section

VIDEO 1, 2 connectors:	These are the output connectors (BNC) for the composite video signals. The VIDEO OUT 2 connector outputs control and the time code signals that are superimposed.
YC (S1 VIDEO) connector:	This is the output connector (4P) for the YC (S1 VIDEO) signal.

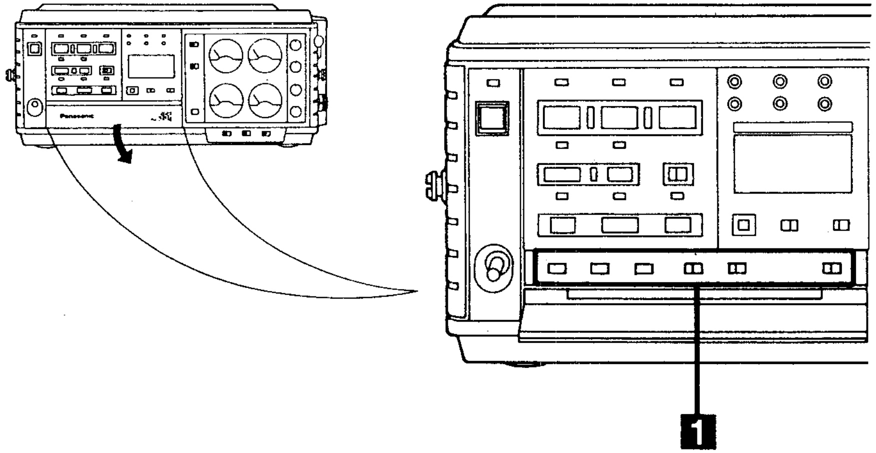
10 DC power section

DC OUT connector (4P):	This is the remote control DC power supply connector (DC 12 V, 0.1 A max.).
EXT DC connector (XLR-4P):	This connector accepts the DC voltage from the AC adaptor.

11 Audio output section

MON/CH1・3 switch:	**MON;**	A signal selected by the AUDIO MONITOR switch (MIX signal in the case of the ST-MIX position) is output to the AUDIO OUT CH1/CH3 connector. The sound level can be adjusted with the MONITOR LEVEL control.
	CH1/3;	Signals selected by the AUDIO OUT switch and the AUDIO OUT level switch are output to the AUDIO OUT CH1/CH3 connector.
AUDIO OUT switch:	**LINEAR;**	CH1 and CH2 (linear) signals are output to the AUDIO OUT connector.
	FM;	CH3 and CH4 (FM) signals are output to the AUDIO OUT connector.
AUDIO OUT level switch:	−20;	The output level with respect to the standard signal level (equivalent to the 0 VU level on the meter) is −20 dBu.
	0;	The output level with respect to the standard signal level (equivalent to the 0 VU level on the meter) is 0 dBu.
CH1/3, CH2/4 connectors:	These are the audio signal output connectors (XLR-3P).	

Lower panel



1 Timecode control section

SHIFT button:	Press to set the time code. Used to shift the flashing indicator of the time code display to the right, and to select the appropriate characters to be set.	
ADJ button:	Changes the number that is selected by the flashing indication position. Pressing the button once advances the number by one, and continually pressing it causes the number to advance rapidly.	
START button:	After setting the time code, this button is used to commence the time code count. In the REC RUN mode, the time code is activated only during recording. Normally, if pressed, time code generator value can be confirmed.	
TC/UB switch:	**TC;**	Selects time code data.
	UB;	Selects the user bits data.
LTC/VITC switch:	**LTC;**	Selects setting or displaying the longitudinal time code.
	VITC;	Selects setting or displaying the vertical interval time code.
FREE RUN/REC RUN switch:	**FREE;**	The VTR will record the time code that is constantly advancing, regardless of which mode the VTR is in.
	REC;	The VTR will record time code, whose count advances only in the REC mode.

NOTE

With composite input signals, the time code is always synchronized with the colour framing of the input video signals when the FREE RUN/REC RUN switch is at the "FREE" position, but the time code is unrelated to the colour framing of these signals at the "REC" position. Therefore, if colour framing editing of the time code is required afterward, be sure to record in the "FREE" position.

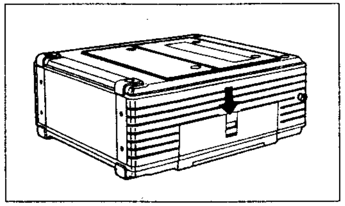
Power supply

This unit is powered by AC adaptor or by rechargeable battery pack.

Battery pack: One AU-BP402 (option), two AU-BP220 (option)
AC adaptor: AG-B640 (option)

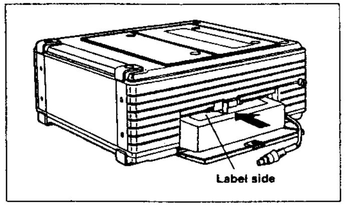
1 When using the battery pack AU-BP402

■ Inserting the battery pack



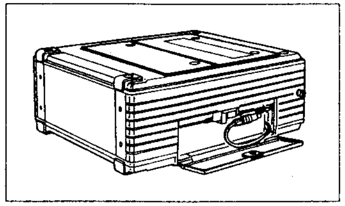
1

Remove the battery compartment cover.



2

Insert the battery pack.



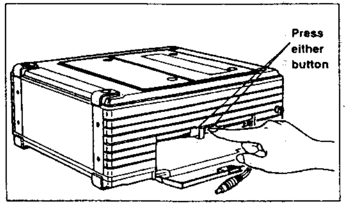
3

Connect the plug.

4

Replace the battery compartment cover.

■ Removing the battery pack



1

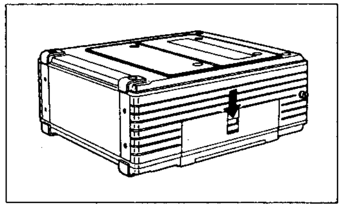
Press the button as illustrated.

NOTES

- When EXT DC connector is connected, the external power supply will be selected automatically. If the connector is not connected, power will be supplied from the battery.
- Before using the battery pack, it must be charged using the battery charger AU-B420.
  For specific details, please refer to the operating instructions of the battery charger AU-B420.
- If NiCd batteries are recharged repeatedly without having been totally discharged, their voltage will drop. This will impair the operation of the unit. Let the batteries discharge completely before recharging them.

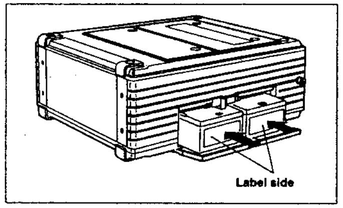
2 When using the battery packs AU-BP220

■ Inserting the battery packs



1

Remove the battery compartment cover.



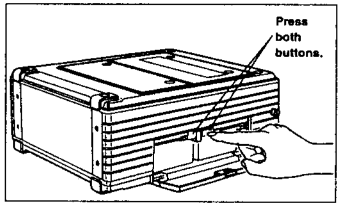
2

Insert two battery packs.

3

Replace the battery compartment cover.

■ Removing the battery pack


Press both buttons.

1

Press the buttons as illustrated.

NOTES

It takes about an hour to recharge one battery pack. For specific details, refer to the operating instructions of the battery charger AU-B420.

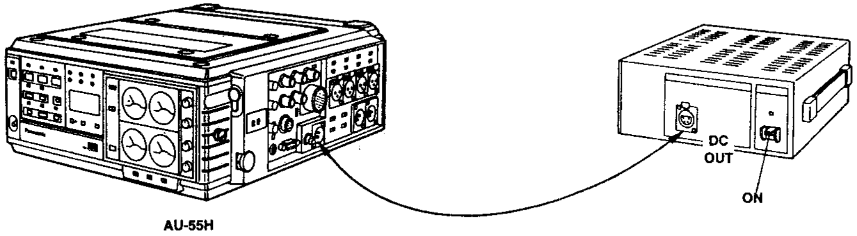
- It may not be possible to recharge an AU-BP220 battery pack satisfactorily immediately after it has been used if the recharging is commenced while it is warm.

■ Cautions for battery pack use

- The battery pack(s) must be removed if the AU-55H is to be transported or otherwise left unused for a prolonged period of time.
- An excessively high or low temperature will reduce the amount of recording time provided by the battery pack(s).
- The BATT lamp will flash when the battery pack charge is almost depleted. Replace the pack(s) with fully recharged pack(s). If operation is continued without replacement, the unit will automatically stop.
- Replacement of one pack only will cause an excessively high current to flow to the empty battery pack which will trip the breaker inside.

3 When using the AC adaptor AU-B110

Connect the AU-55H with the AC adaptor AU-B110 (option) for operation with AC power.

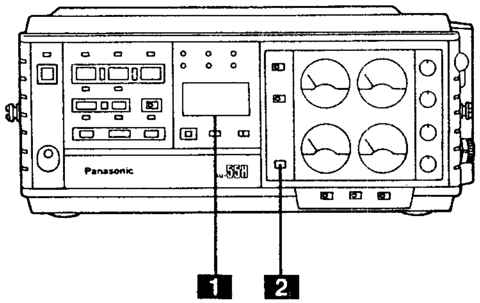


AU-55H

DC cable
(standard accessory
with AU-B110)

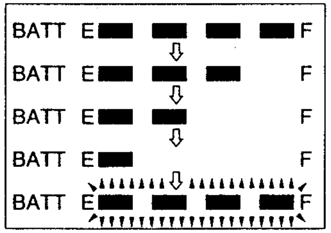
AC adaptor
AU-B110

4 Remaining time of battery



1

When the battery runs down, the ■ indicators will gradually go out from the right.



When all of the ■ indicators flash, the battery can not be used. Replace the battery with a charged one.

2

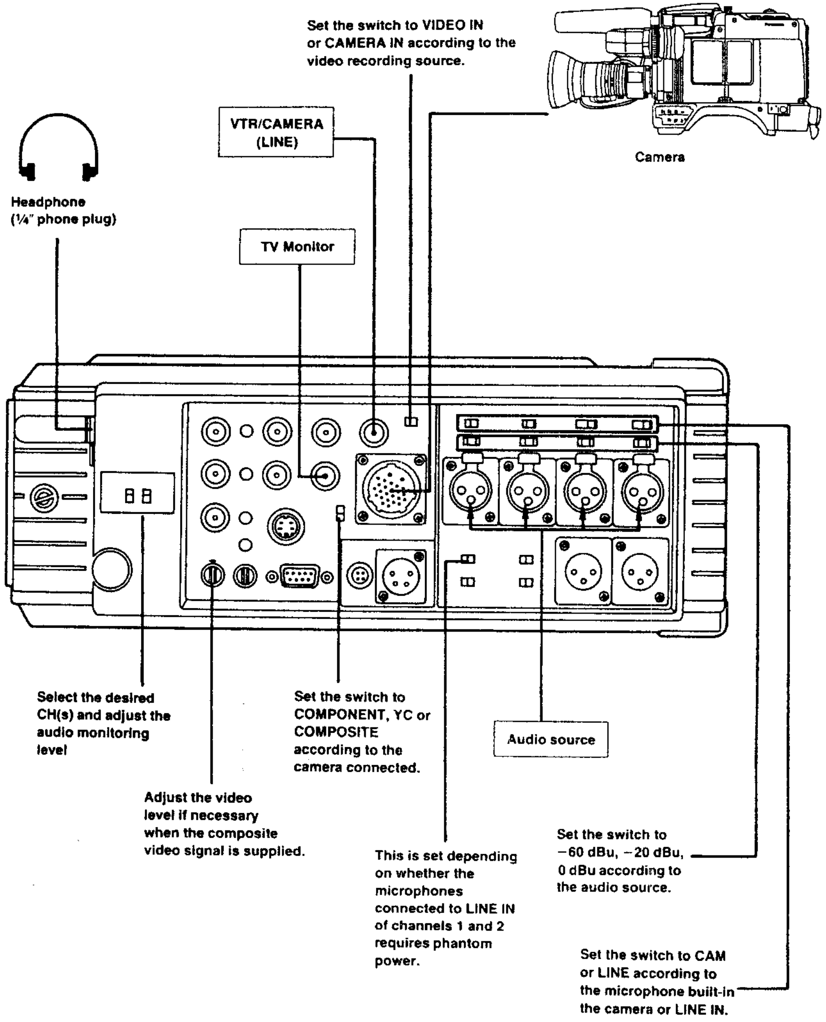
If the CMPNT•BATT CHECK button is pressed, the remaining battery capacity will be displayed on the CH4/VIDEO•TRACKING meter.

CAUTION

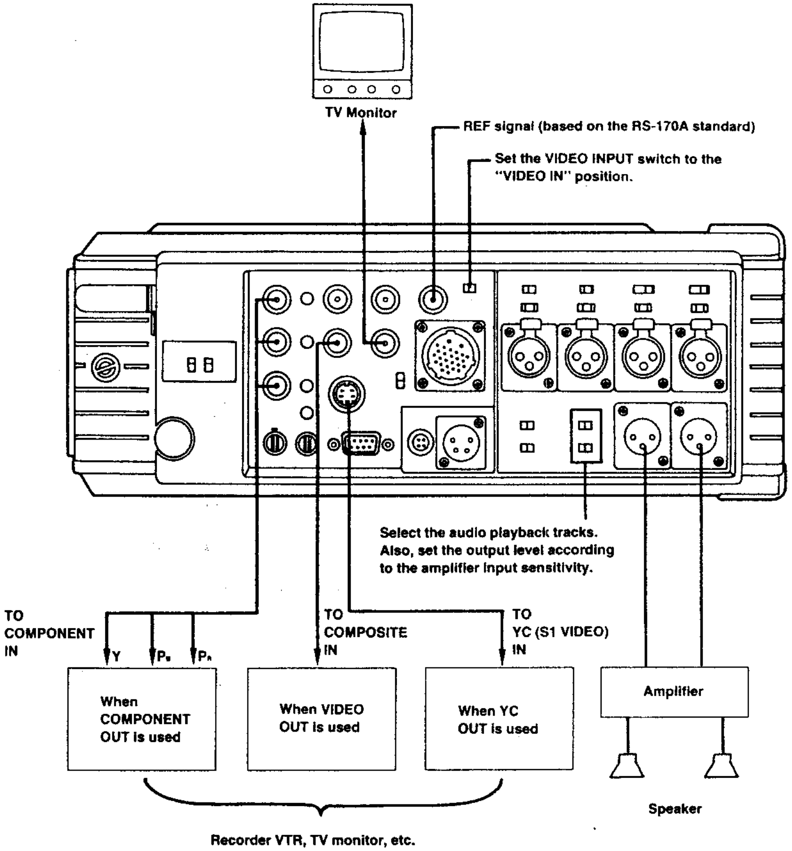
When the battery runs down, operations may not be possible. In such case, immediately replace the battery with a fully charged one. If this fails to correct the problem, consult your service personnel.

Connection

1 Connection for recording


Set the switch to VIDEO IN or CAMERA IN according to the video recording source.
Camera
VTR/CAMERA (LINE)
Headphone (¼" phone plug)
TV Monitor
Select the desired CH(s) and adjust the audio monitoring level
Set the switch to COMPONENT, YC or COMPOSITE according to the camera connected.
Audio source
Adjust the video level if necessary when the composite video signal is supplied.
This is set depending on whether the microphones connected to LINE IN of channels 1 and 2 requires phantom power.
Set the switch to −60 dBu, −20 dBu, 0 dBu according to the audio source.
Set the switch to CAM or LINE according to the microphone built-in the camera or LINE IN.

2 Connection for playback


TV Monitor
REF signal (based on the RS-170A standard)
Set the VIDEO INPUT switch to the "VIDEO IN" position.
Select the audio playback tracks. Also, set the output level according to the amplifier input sensitivity.
TO COMPONENT IN
Y
P_B
P_R
TO COMPOSITE IN
TO YC (S1 VIDEO) IN
When COMPONENT OUT is used
When VIDEO OUT is used
When YC OUT is used
Amplifier
Speaker
Recorder VTR, TV monitor, etc.

Warning lamp

The warning lamps and headphones warn the operator of the VTR status. Refer to the table below. The VTR lamp on the viewfinder of the camera flashes to warn that the trouble may be occured on the VTR side.

Warning lamp		Front LED	State	Alarm	TALLY	CAM BATT	VTR operation	Eject
Lamp	**Operation**							
RF	PLAY REC REVIEW REC PAUSE	Lights	Video head clogging	— — —	Flashes (4 Hz)	———	WARNING	○
SERVO	REC	Lights	Servo distur-bance	— — —	Flashes (4 Hz)	———	WARNING	○
	PLAY			None	Flashes (4 Hz)	———	WARNING	○
HUMID	Tape does not stick to cylinder in REC	Lights	Conden-sation	— — —	Flashes (4 Hz)	———	WARNING	○
	Tape sticks to cylinder in REC	Lights		— — —	Flashes (4 Hz)	———	AUTO OFF	○
	Modes other than recording	Lights		— — —	Flashes (4 Hz)	———	AUTO OFF	○
SLACK	All modes	Lights	Tape take-up error	———	Flashes (4 Hz)	———	AUTO OFF	×
END	Near tape end during recording	Flashes (1 Hz)	Near tape end	— —	Flashes (1 Hz)	———	WARNING	○
	Tape at end	Lights	Tape ends	———	Flashes (4 Hz)	———	WARNING	○
BATT	All modes	Lights	Battery drain	———	Flashes (4 Hz)	Lights	AUTO OFF	×
	During recording	Flashes (1 Hz)	Near battery drain	— —	Flashes (1 Hz)	Flashes (1 Hz)	WARNING	○
	Modes other than recording			None	Flashes (1 Hz)	Flashes (1 Hz)	WARNING	○

Reference

- The alarm symbols denote;
  - — — —: 4 times/sec.
  - — —: Once/sec.
  - ———: ON
- In "WARNING" of VTR operation, the unit continues the present mode.

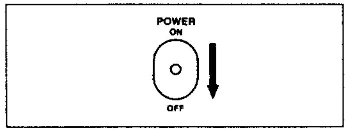
NOTES

- If a tape take-up error occurs during ejecting the cassette, the EJECT lamp will flash (4 Hz) as well as the light up of the SLACK lamp.
- When the SLACK lamp lights up, the cassette cannot be ejected. In this case, turn off the power and perform emergency eject on page 53.

Emergency eject

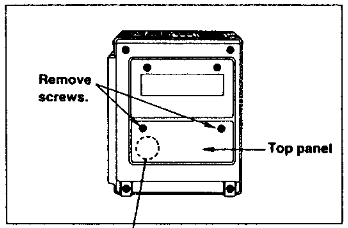
If the cassette cannot be ejected by pressing the EJECT button, follow the steps below.

1



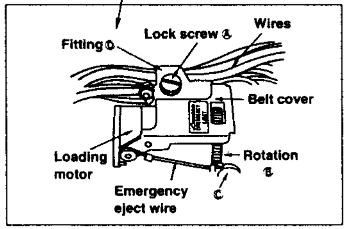
Turn off the power.

2



Remove the top panel.

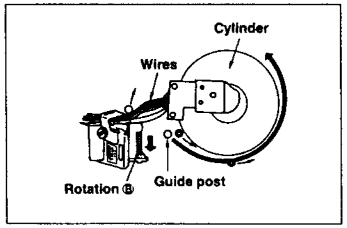
3



1. Unscrew the lock screw Ⓐ on the loading motor using the screwdriver.
2. Open the belt cover.

NOTE: In order not to damage the tape, open and return the belt cover a few times.

4

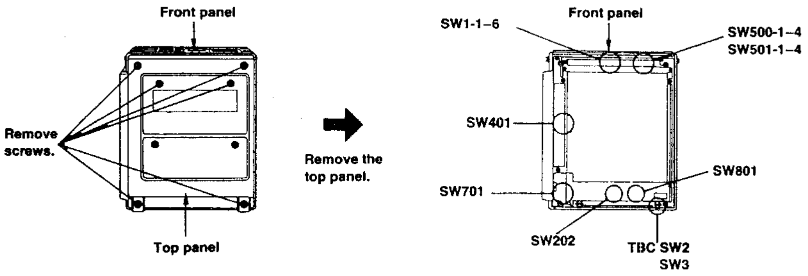


1. Turn the rotation Ⓑ on the loading motor as the arrow shows until the cassette can be ejected.
   - The guide post moves as the rotation Ⓑ is rotated.
2. When finished, close the belt cover and screw the lock screw Ⓐ.
   - Be sure that the emergency eject wire is suspended on the position Ⓒ.

NOTES

- When the belt cover is open, the unit cannot be operational.
- Do not use the emergency eject except the unit's trouble.
- When tighten the lock screw Ⓐ, make sure that the wires are fixed by the fitting Ⓓ.

Printed circuit board



Board	SW No.	Name	Description of function	Initial setting
SYSCON & TC	SW1-1	UB real time switch	VITC-UB is used as the internal real time clock.	OFF
	SW1-2		LTC-UB is used as the internal real time clock.	ON
	SW1-3	Income video select switch	**ON:** Recording is available with no video input. **OFF:** Recording cannot be performed with no video input. If no video input during recording, the unit will go into REC PAUSE mode.	OFF
	SW1-4	9P serial device type switch	Selects the ID code (device type data) for the 9P device type request command when the unit is connected to a 9P remote controller. **ON:** ID code exclusive for AU-55H. (A020H) **OFF:** ID code for other models. (1000H)	OFF
	SW1-5–6	———	Not used.	OFF
	SW500-1–4 SW501-1–4	VITC line select switch	Inserts VITC to lines 12H–19H. When the DIP SW is placed on the bit, the mode is ON and the blanking occurs. Inserting lines are shown below.	SW500 1 OFF 2 OFF 3 ON 4 OFF SW501 1 OFF 2 ON 3 ON 4 OFF

VITC insert position (bit)	1	2	3	4
7H	OFF	OFF	OFF	OFF
8H	ON	OFF	OFF	OFF
9H	OFF	ON	OFF	OFF
10H	ON	ON	OFF	OFF
11H	OFF	OFF	ON	OFF
13H	OFF	ON	ON	OFF
14H	ON	ON	ON	OFF
15H	OFF	OFF	OFF	ON
16H	ON	OFF	OFF	ON
17H	OFF	ON	OFF	ON
18H	ON	ON	OFF	ON
19H	OFF	OFF	ON	ON
20H	ON	OFF	ON	ON
21H	OFF	ON	ON	ON
22H	ON	ON	ON	ON

Note:
Two lines are selectable. Be sure not to select the same line. (However, 12H is always blank.)

Board	SW No.	Name	Description of function	Initial setting
DECODER & CTCM	SW401	Y/C separation switch	**AUTO:** Y/C separation and non separation are automatically performed. **COLOR:** Forcibly set to COLOUR mode and Y/C separation is performed. **B/W:** Forcibly set to B/W mode and Y/C separation is not performed.	AUTO
	SW701	WIDE input switch	**WIDE:** Forcibly records the wide size video information (aspect ratio of 16:9). **NORM:** For normal video input.	NORM
TBC	SW2	V blanking select switch	Removes the video signal on the V blanking.	
			1 16H	OFF
			2 15H	OFF
			3 14H	OFF
			4 13H	OFF
			5 12H (VISC)	ON
			6 11H	OFF
			7 10H	OFF
			8 9H	OFF
			Note: 12H is always set to ON (blanking).	
	SW3	V blanking select switch	Removes the video signal on the V blanking.	
			1 22H	OFF
			2 21H	OFF
			3 20H	OFF
			4 19H	OFF
			5 18H	OFF
			6 17H	OFF
	SW202	VIDEO phase switch	Adjusts the video phase.	7/8/9
	SW801	YC (4P) output WIDE select switch	Selects whether to place the wide size information on the YC output signals. **AUTO:** The wide size information is automatically identified and placed on the YC output signals. **ON:** The wide size information is placed on the YC output signal. **OFF:** The wide size information is not placed on the YC output signal.	AUTO

Connectors pin signal

■ CAMERA INPUT (26P)

Pin No.	Signal
1	COMPOSITE VIDEO
2	COMPOSITE VIDEO GND
3	Y GND
4	Y
5	P_R/C
6	P_R GND
7	P_B
8	P_B GND
9	CAMERA MIC (X)
10	CAMERA MIC (Y)
11	CAMERA MIC (G) GND
12	VTR START/STOP
13	BATTERY ALARM
14	TAPE REMAIN
15	REC/TALLY/WARNING
16	——
17	SHIELD
18	PLAYBACK VIDEO
19	PLAYBACK VIDEO GND
20	VTR SAVE/AUDIO MONITOR
21	——
22	COLOUR FRAMING PULSE
23	——
24	——
A	POWER +12 VDC
B	POWER GND

■ YC (S1 VIDEO) INPUT/OUTPUT (4P)

Pin No.	Signal
1	Y GND
2	C GND
3	Y SIGNAL IN/OUT
4	C SIGNAL IN/OUT

■ REMOTE (9P)

Pin No.	Signal
1	GND
2	TRANSMIT A
3	RECEIVE B
4	RECEIVE COMMON
5	——
6	TRANSMIT COMMON
7	TRANSMIT B
8	RECEIVE A
9	GND

■ AUDIO INPUT/OUTPUT (XLR-3P)

Pin No.	Signal
1	GND
2	HOT
3	COLD

■ EXT DC INPUT (XLR-4P)

Pin No.	Signal
1	GND
2	——
3	——
4	+12 V

■ DC OUTPUT (4P)

Pin No.	Signal
1	GND
2	——
3	——
4	+12 V

Precaution for handling unit

Handling

•Vibration

Avoid using the unit in a location which is susceptible to vibration.

•Magnetism

Do not bring the unit near any source of magnetism or use it near any product which generates a strong magnetic field.

•Temperature

Under no circumstances should the unit be used in extremely hot or cold location or where it will be exposed to direct sunlight since its performance may deteriorate as a result.

Operating temperature: +0°C to +40°C (+32°F to +104°F)

When performing continuous recording for hours with unit placed in the optional carrying case, we recommend you to use the MODE switch in the "SAVE" position to prevent the temperature of the set from rising. (If the unit is placed in the carrying case and used under high temperature for hours with the MODE switch in the "EE•PB" or "PB" position, the unit will automatically switch to the SAVE mode to prevent the set from overheat.)

•Humidity

This unit does not take kindly to humidity. Avoid using it or where it may be exposed to rain.

•Re-location

—When moving the unit from place to place, eject the cassette tape first.

Installation

Bear in mind the details below on the operating environment and installation space, and operational and servicing.
Use the unit on a flat and horizontal surface.

—In order to minimize trouble, do not place objects on top of the unit.

—If the unit is to be mounted on a stand, use a stand which is sturdy.

—Leave a clearance of at least 40 cm from a wall or other surface behind the unit so as to allow for ventilation and servicing.

—If the unit is to be used on a desk or other such surface, leave a clearance of at least 20 cm above the unit as to allow for the servicing of the circuit boards. Such a clearance is not required for rack-mounting since the unit is pulled out for circuit board maintenance.

Maintenance

- Before proceeding with maintenance, set the power switch to the OFF position.
- Use a soft cloth to clean the cabinet. To remove stains or stubborn dirt, wipe the unit with a dry cloth.
- Never use paint thinners or benzine.

Storage

- Do not store the unit in an extremely hot or cold location.
- The unit should never be left outdoors.
- If the unit will not be used for a prolonged period of time, set its power switch to the OFF position, and be sure to take out the battery pack(s). This will help prevent accidents.
- If a cassette tape is in the unit, be sure to eject it.

Technical Description

1. Introduction

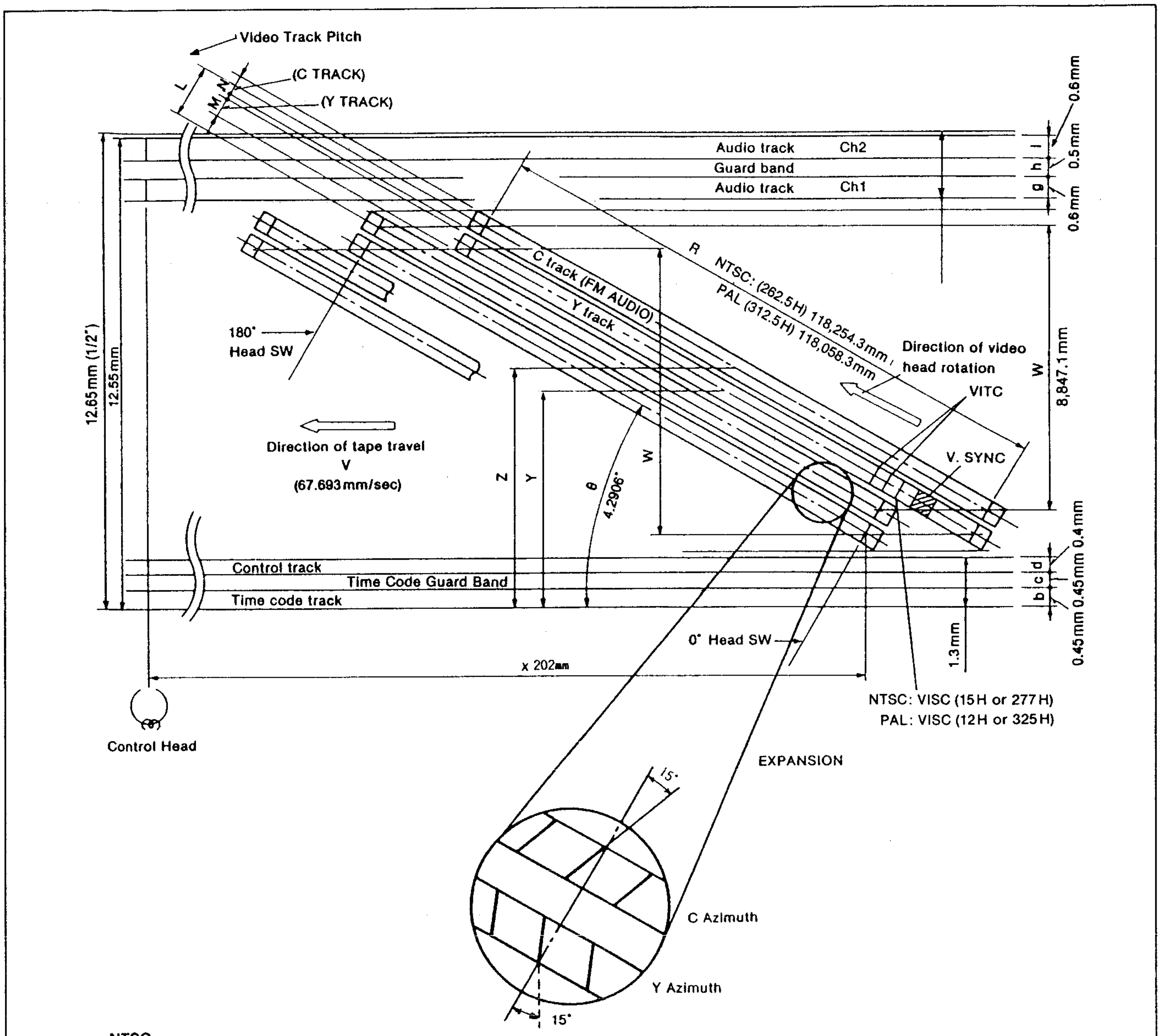
The AU-55H Portable VTR offers improved operation, reliability and favorable cost/performance to meet the diverse needs of MII users. It inherits all the outstanding performance features of the AU-520, 90-minute recording capability, 4 channel audio, and the addition of a built-in TBC.
Power consumption has been reduced to a mere 17W (using SAVE REC mode).

Figure 1 is the comparison of main features between the AU-55H, AU-520 and Sony BVW-50.

Feature	Panasonic AU-520	Sony BVW-50	Panasonic AU-55H
Built-in TBC	×	○	○
YC (S1 Video) Output	×	×	○
Digital Hour Meter	×	○	○
Y, P_B, P_R Level Check	×	○	○
Audio AGC Circuit	× (Limiter)	○	○
BNC Component Output	×	○	○
Color Framing	○	○	○
Phantom Mic Power Supply	○	○	○
BVR-3 (Sony) Remote Power Supply	×	○	○
REC Review Function	×	×	○
Audio 4CH Inputs / Meters	○	○	○
Built-in TC Gen / Reader	○	○	○
RS-422A Remote Connector	○	○	○
Dolby NR System	○	○	○
Confidence Playback	○	○	×
Ventilation Fan	○	×	×
CTCM Output	○	○	×
RF Converter	○ (Option)	○ (Option)	×
Audio Playback Level Control	○	○	×
Audio 4CH Outputs	○	○	2 CH
SC / SYNC Input	SC/SYNC	SC	×(Video)
Front Loading	×	○	×
Recording Time	90 Min.	90 Min.	90 Min.
Power Consumption (Save Mode)	32W	19W	17W
Type of Tape	Metal	Metal/Gamma	Metal
Auto A/C Head Cleaning	×	×	○

Fig. 1 Comparison of Main Features

2. MII Format VTR


Video Track Pitch
(C TRACK)
(Y TRACK)
L
M
N
Audio track Ch2
Guard band
Audio track Ch1
i
h
g
0.6mm
0.5mm
0.6mm
C track (FM AUDIO)
Y track
R
NTSC: (262.5H) 118,254.3mm,
PAL (312.5H) 118,058.3mm
Direction of video head rotation
VITC
V. SYNC
W
8,847.1mm
180° Head SW
12.65mm (1/2")
12.55mm
Direction of tape travel
V
(67.693mm/sec)
Z
Y
θ
4.2906°
W
Control track
Time Code Guard Band
Time code track
d
c
b
0.4mm
0.45mm
0.45mm
0° Head SW
1.3mm
x 202mm
Control Head
NTSC: VISC (15H or 277H)
PAL: VISC (12H or 325H)
EXPANSION
15°
C Azimuth
Y Azimuth
15°

NTSC

L : Video track pitch 84.5μm
M : Y track width 44μm
N : C track width (FM Audio) 36μm
R : Video track length 118,254.3μm
W : Effective video width 8,847.1μm
Y : Height of Y track center 6,050μm
Z : Height of C track center 6,092.1μm
θ : Video track inclination angle .... 4.2906°
X : Control signal recording position 202,000μm

b : Time code track width 450μm
c : T/C guard width 450μm
d : Control track width 400μm
g : Audio track Ch1 width 600μm
h : Audio guard width 500μm
i : Audio track Ch2 width 600μm
Tape travel speed : 67.693mm/sec
Relative speed : 7.09m/sec
Tape width : 12.65mm
αH : H alignment 2.5H

PAL

L : Video track pitch 99.3μm
M : Y track width 56μm
N : C track width (FM Audio) 36μm
R : Video track length 118,058.3μm
W : Effective video width 8,847.1μm
Y : Height of Y track center 6,050μm
Z : Height of C track center 6,099.5μm
Θ : Video track inclination angle .... 4.2977°

X : Control signal recording position 202,000μm
b : Time code track width 450μm
c : T/C guard width 450μm
d : Control track width 400μm
g : Audio track Ch1 width 600μm
h : Audio guard width 500μm
i : Audio track Ch2 width 600μm
Tape travel speed: .... 66.295mm/sec.
Relative speed: .... 5.90m/sec.
Tape width: 12.65mm
αH: H alignment 3.5H

Fig. 2 MII VTR Tape Format

In the MII Format VTR, a separate Y/C track component recording system is utilized, that ensures wide band luminance (Y) and chrominance (C) signals as well as excellent S/N (signal to noise ratio).

In this system, Y and C channels are recorded separately by FM modulation, so that high quality pictures can be obtained at lower frequencies, as compared with direct FM recording.

Signals of high S/N can be reproduced with a relatively small drum diameter. However, to achieve picture quality equivalent to present broadcast VTRs, relatively high FM carrier frequencies are required.

We set the FM frequency deviation of the luminance and chrominance signals as shown in Figure 3, to attain sufficient performance with respect to S/N, frequency band, and waveform reproduction (related to white-dark clip).

Figure 4 shows the video head construction and the side view of the drum unit.

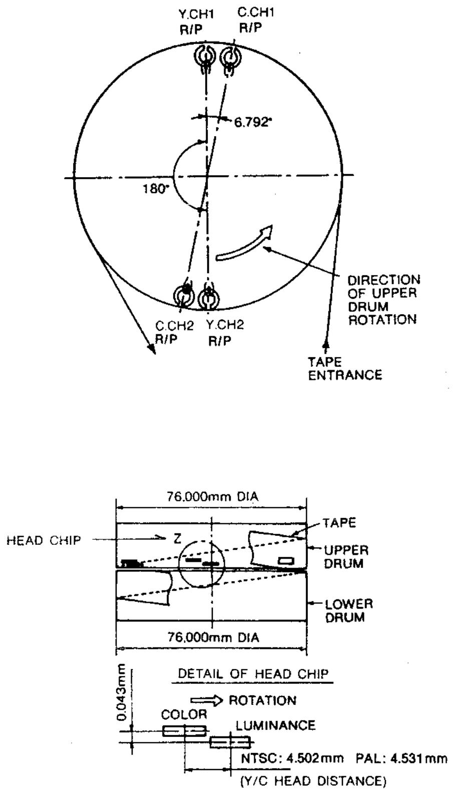

Y.CH1
R/P
C.CH1
R/P
6.792°
180°
C.CH2
R/P
Y.CH2
R/P
DIRECTION OF UPPER DRUM ROTATION
TAPE ENTRANCE
76.000mm DIA
HEAD CHIP
Z
TAPE
UPPER DRUM
LOWER DRUM
76.000mm DIA
0.043mm
DETAIL OF HEAD CHIP
ROTATION
COLOR
LUMINANCE
NTSC: 4.502mm PAL: 4.531mm
(Y/C HEAD DISTANCE)

Fig. 4 Video Head Construction

TEST POINT	FM FREQUENCY DEVIATION	
	NTSC	PAL
INPUT	75% Color Bar	100% Colour Bar
Y	5.6 ~ 7.7MHz	6.63 ~ 7.2MHz
C	4.8 ~ 6.2MHz	5.4 ~ 7.0MHz

Fig. 3 FM Frequency Deviation

Regarding drum diameter, it is 76mm so that the recording wave length may be approximately 1um (NTSC) / 0.65um (PAL) at peak white.

The recording wave length of the luminance signal is 1.31um [sync tip] -0.94um [peak white] (NTSC) / 0.89um [sync tip] -0.65um [peak white] (PAL). The recording wave length at white clip is 0.67um (NTSC) / 0.44um (PAL) [white clip is 270%].

Figure 5 shows the A/C head stack construction.

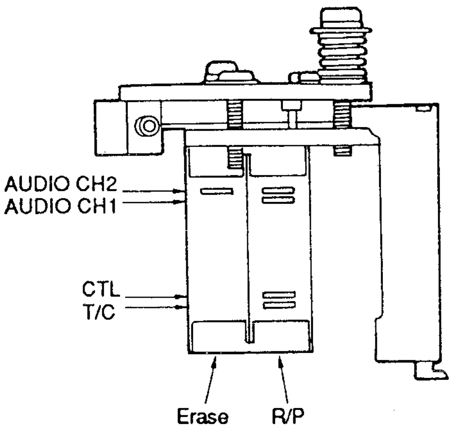

AUDIO CH2
AUDIO CH1
CTL
T/C
Erase
R/P

Fig. 5 A/C Head Construction

3. Recording & Playback Process

3-1. Video Signal Process

The MII system employs a component recording method which has two separate tracks (Y and C) on the tape for video signal recording.

To make this type of recording, the incoming composite video signal is first separated by the Decoder circuit into Y, Pb (B-Y) and Pr (R-Y).

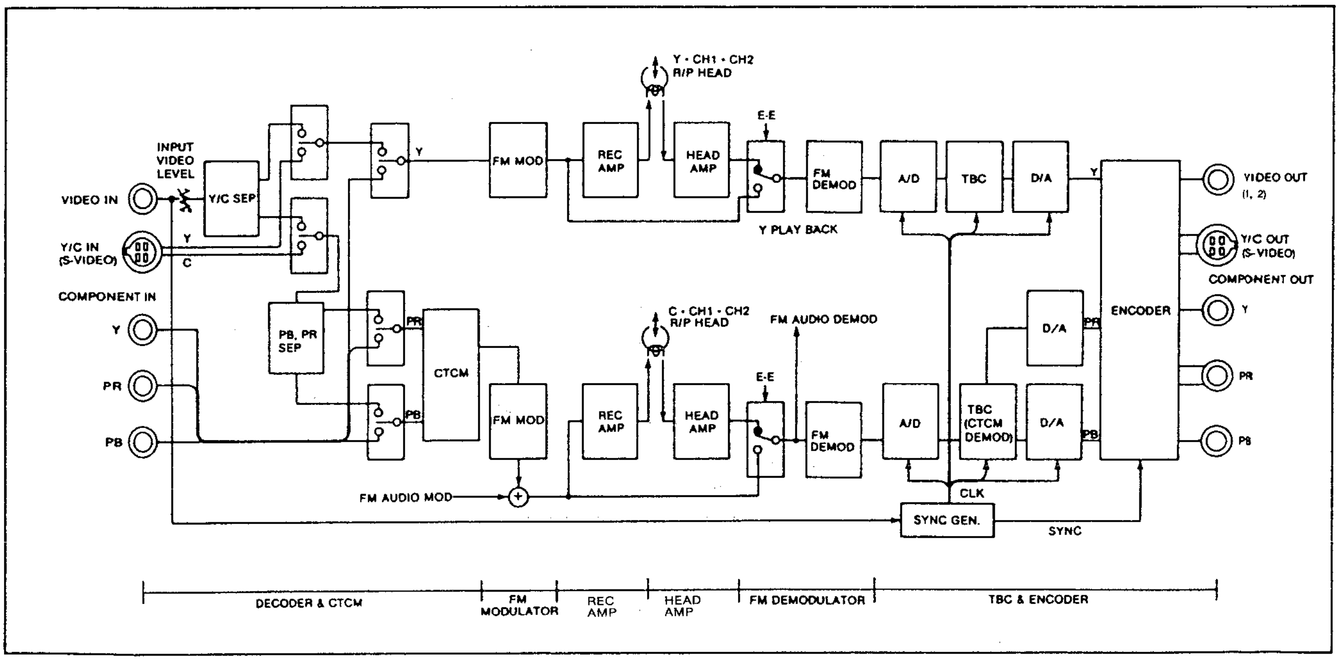
The Y signal is directly sent to FM modulator. While the two Pb and Pr signals, (one horizontal line each) are then compressed by the CTCM (Chroma Time Compressed Multiplex) circuit to form one horizontal line that is called the CTCM signal. After being compressed, the CTCM signal is sent to FM modulator, so the signal can be recorded onto the tape.

Both the Y and CTCM signals are separately FM modulated and recorded on their own separate Y and C tracks on the tape.

During playback mode, the Y and C signals are demodulated, and these signals are supplied to TBC (Time Base Corrector) circuit.

The TBC section reduces "jitter" and expands the CTCM signal to the original Pb, Pr signals. At this time, dropout compensation is also performed.

After TBC correction, the Y and C signals are encoded into the output signals as shown in Figure 6.



Y · CH1 · CH2
R/P HEAD
INPUT
VIDEO
LEVEL
VIDEO IN
Y/C SEP
Y/C IN
(S-VIDEO)
Y
C
COMPONENT IN
Y
PR
PB
PB, PR
SEP
Y
PR
PB
CTCM
FM MOD
REC
AMP
HEAD
AMP
FM MOD
REC
AMP
HEAD
AMP
C · CH1 · CH2
R/P HEAD
FM AUDIO MOD
E-E
E-E
Y PLAY BACK
FM AUDIO DEMOD
FM
DEMOD
FM
DEMOD
A/D
TBC
D/A
A/D
TBC
(CTCM
DEMOD)
D/A
D/A
Y
PR
PB
CLK
SYNC GEN.
SYNC
ENCODER
VIDEO OUT
(1, 2)
Y/C OUT
(S-VIDEO)
COMPONENT OUT
Y
PR
PB
DECODER & CTCM
FM
MODULATOR
REC
AMP
HEAD
AMP
FM DEMODULATOR
TBC & ENCODER

Fig. 6 Block Diagram of the Video Signal Process

3-2. Time Axis Compressing and Expansion Process

In a system in which the time axis of the color difference signals uses compression during recording, and expansion during playback, a highly accurate TBC is required. Residual "jitter" increases during expansion, in the MII format, a pilot burst signal (2.25MHz for NTSC / 3.375MHz for PAL) is inserted during the horizontal blanking period. This is done for the three component signals, enabling very stable TBC Write clock synchronization. The playback picture is processed by using of horizontal sync and the pilot burst signals, thereby reducing "jitter".

The Y signal is recorded and the pilot burst is synchronized to the horizontal sync signal. A horizontal sync signal and pilot burst signal are added to both horizontal blanking periods of the Pb and Pr signals. Both signals are separately compressed in time axis and are recorded as a time division multiplex signal.

Time base errors in the playback signal can be removed by using horizontal sync and pilot burst signals, for Y/C timing, solving the problem of timing errors which has been the weak point in other time axis compression recording systems. The recording signal waveform of the MII is shown in figure 7.

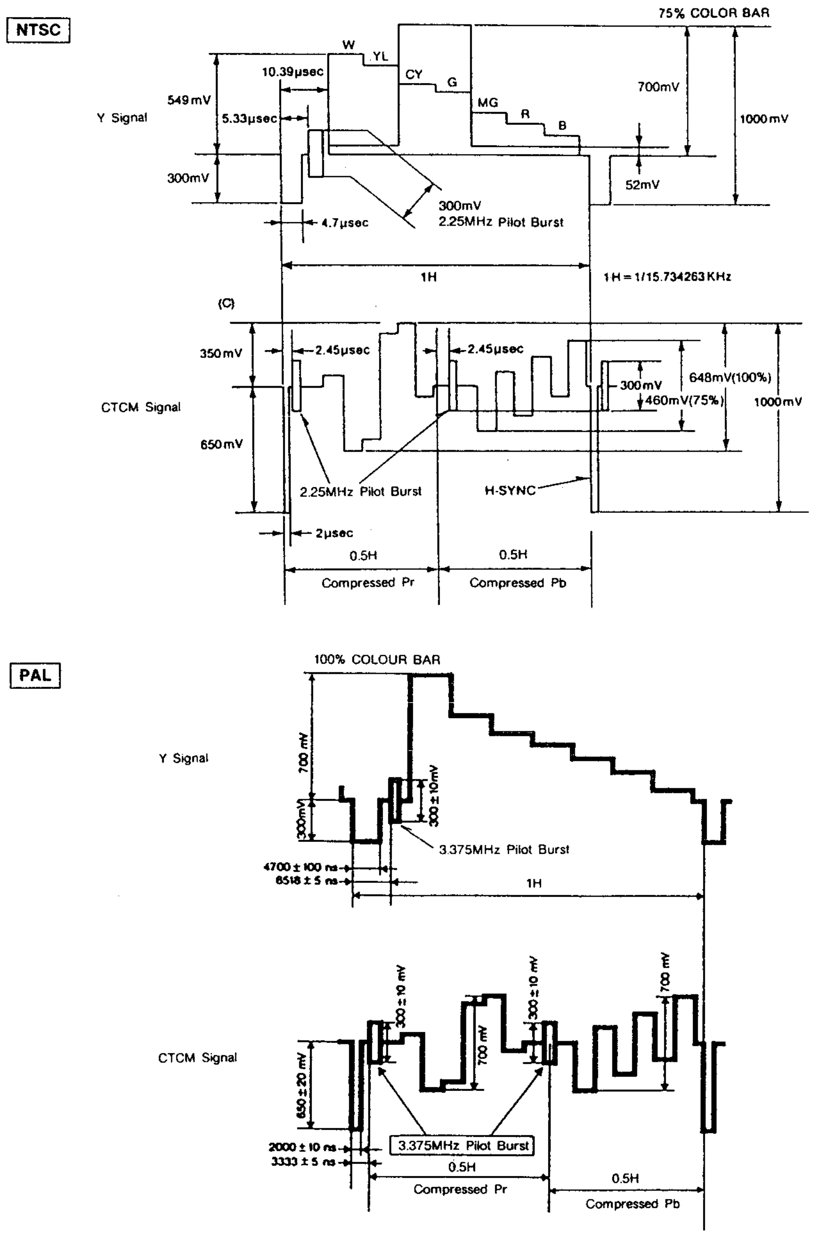

NTSC
75% COLOR BAR
W
YL
CY
G
MG
R
B
10.39μsec
5.33μsec
549mV
Y Signal
300mV
700mV
1000mV
52mV
4.7μsec
300mV
2.25MHz Pilot Burst
1H
1H=1/15.734263KHz
(C)
350mV
2.45μsec
2.45μsec
CTCM Signal
650mV
300mV
648mV(100%)
460mV(75%)
1000mV
2.25MHz Pilot Burst
H-SYNC
2μsec
0.5H
0.5H
Compressed Pr
Compressed Pb
PAL
100% COLOUR BAR
Y Signal
700 mV
300mV
300 ± 10mV
3.375MHz Pilot Burst
4700 ± 100 ns
6518 ± 5 ns
1H
CTCM Signal
300 ± 10 mV
700 mV
300 ± 10 mV
700 mV
650 ± 20 mV
2000 ± 10 ns
3333 ± 5 ns
3.375MHz Pilot Burst
0.5H
Compressed Pr
0.5H
Compressed Pb

Fig. 7 Waveform of Color Recording (CTCM) Signal

3-3. Frequency Allocations

The luminance and compressed CTCM chrominance signal are separately FM modulated as shown in Figure 8 and they are then recorded onto the tape. The FM audio signal is also FM modulated within the CTCM chrominance signal, as shown in Figure 8.

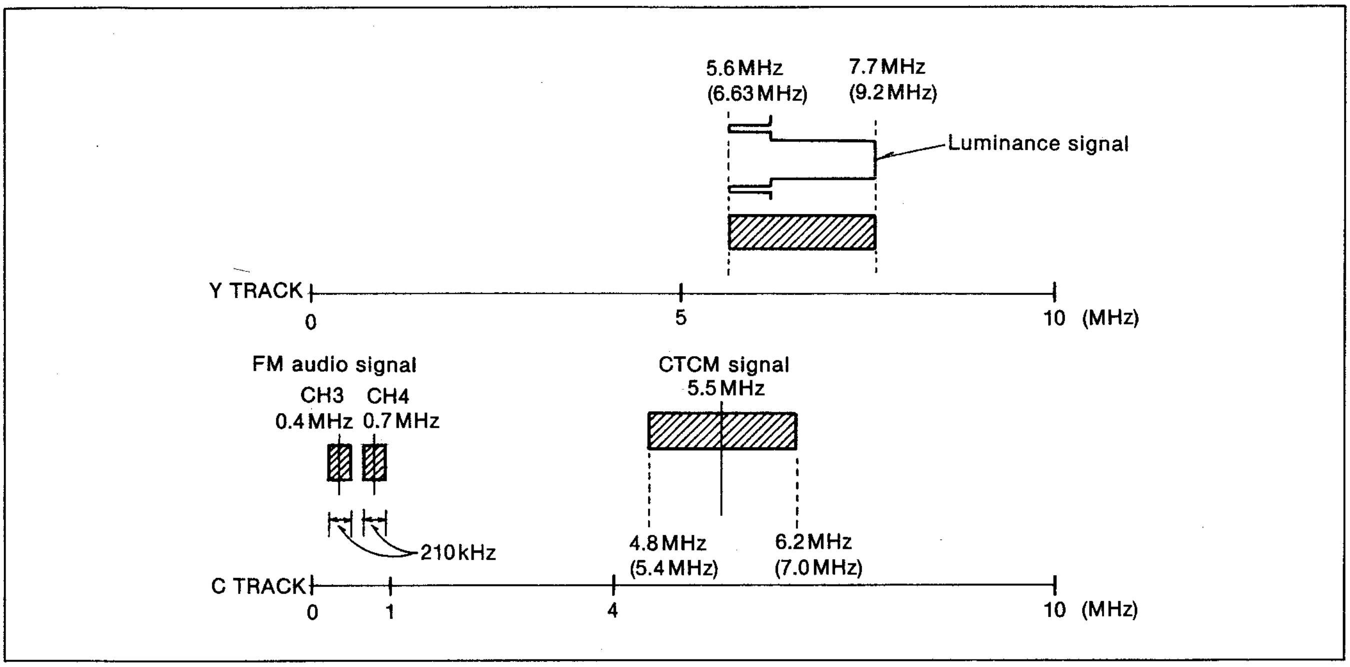


Fig. 8 Frequency Allocation

3-4. Time Base Corrector (TBC)

Figure 9 is the block diagram of the TBC. The TBC consists of A/D, memory, Write-PLL, D/A, Encoder and SYNC GEN circuits. The TBC has a ± 16H window. It is able to output color pictures in search speeds up to ×5 times and B/W pictures at speeds up to ×16 times (with remote controller).

In addition, when the VISC signal is added to the video signal, the phase of the TBC read clock is controlled to match the encoder's sub carrier to the VISC signal.

In the A/D block, the Y and CTCM signals are converted to 8-bit digital signals and are supplied to the memory block.

The memory block performs video signal processing such as timing adjustments, jitter correction, drop-out correction, interpolation, and averaging.

Regarding chrominance signals in particular, level differences are often generated line by line due to clamping errors in the time axis compression or level alteration during recording. This may cause line crawling, sub carrier leak or a vertical stripe "beating" in the pictures reproduced. To prevent these problems, it is necessary to perform line averaging of the playback Pr and Pb signals.

In the D/A-ENCODER block, the time axis corrected and expanded digital signal is converted to analog. The color difference signals are balance modulated. The Y signal, modulated color signal, and synchronizing signals are added, and this signal is output as a composite video signal.

The Write-PLL block determines the accuracy concerning jitter, vertical sync, and Y/C timing delays between Y, Pb, Pr.
The write clock is generated in one of two ways depending on the presence or absence of azimuth skew error. Without azimuth skew, the write clock is synchronized with playback Y signal. Y and C are timed to each other via APC and AFC loops to a 54MHz master clock and the added H sync and pilot burst signals. For the C signal, a burst is added to the Pb and Pr components before time compression for accurate reconstruction during playback.

When azimuth skew exists, the write clock is regenerated by the search VCO and instantaneously phase-locked with each horizontal synchronizing pulse of the Y and C signals.

In addition, this block performs vertical synchronizing during playback.

In the SYNC GEN. block, with an incoming video signal applied, the TBC read clock is synchronized to this incoming video signal. Various horizontal and vertical synchronizing signals are produced.

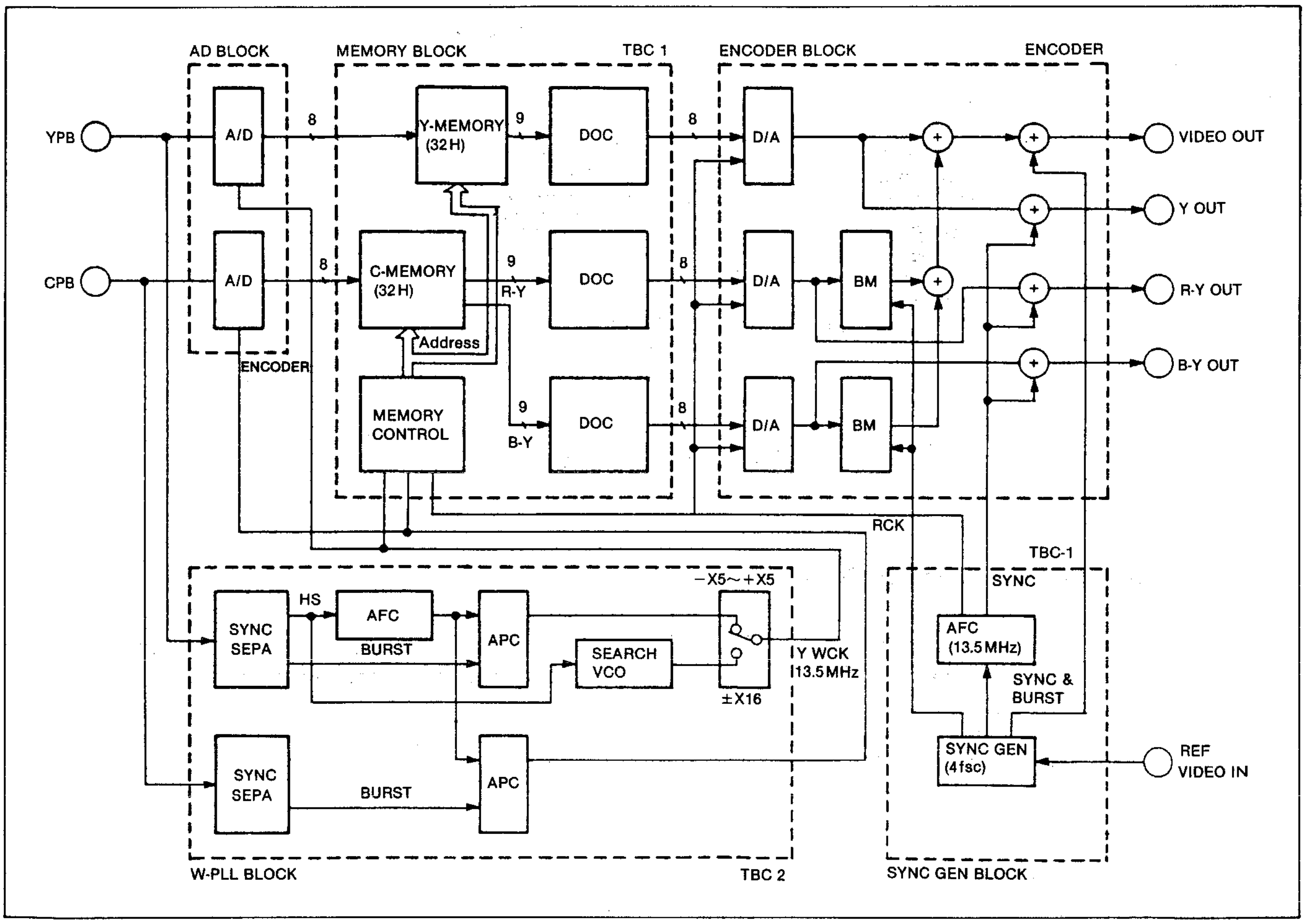

AD BLOCK
MEMORY BLOCK
TBC 1
ENCODER BLOCK
ENCODER
YPB
CPB
A/D
A/D
8
8
Y-MEMORY
(32H)
C-MEMORY
(32H)
9
9
9
R-Y
B-Y
Address
MEMORY
CONTROL
ENCODER
DOC
DOC
DOC
8
8
8
D/A
D/A
D/A
BM
BM
+
VIDEO OUT
Y OUT
R-Y OUT
B-Y OUT
RCK
TBC-1
SYNC
AFC
(13.5MHz)
SYNC &
BURST
SYNC GEN
(4fsc)
REF
VIDEO IN
SYNC GEN BLOCK
−X5~+X5
HS
SYNC
SEPA
AFC
BURST
APC
SEARCH
VCO
±X16
Y WCK
13.5MHz
SYNC
SEPA
BURST
APC
W-PLL BLOCK
TBC 2

Fig. 9 TBC Circuit

4. System Application

The AU-55H includes the followimg features:

1) Built-in TBC for high-quality playback.
2) 9 Pin RS-422A Serial remote interface. This is fully compatible with other existing broadcast serial controllers.
3) 26 pin camera SMPTE Connector. It will accept either component, Y/C or composite signals from the camera.

Therefore, it can be widely used as shown in Figure 10.

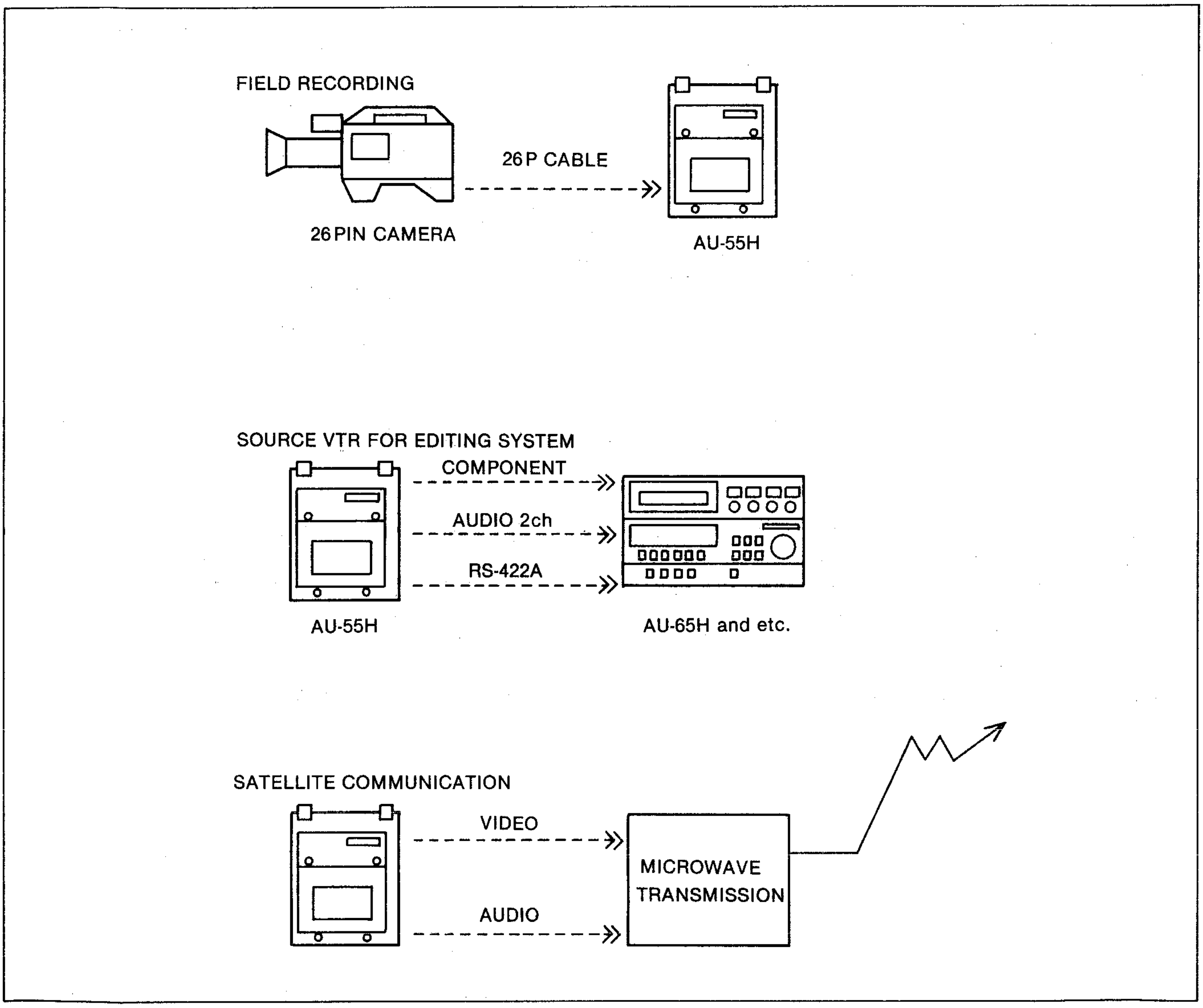

FIELD RECORDING
26P CABLE
26PIN CAMERA
AU-55H
SOURCE VTR FOR EDITING SYSTEM
COMPONENT
AUDIO 2ch
RS-422A
AU-55H
AU-65H and etc.
SATELLITE COMMUNICATION
VIDEO
AUDIO
MICROWAVE TRANSMISSION

Fig. 10 System Application

5. Tape Transport System

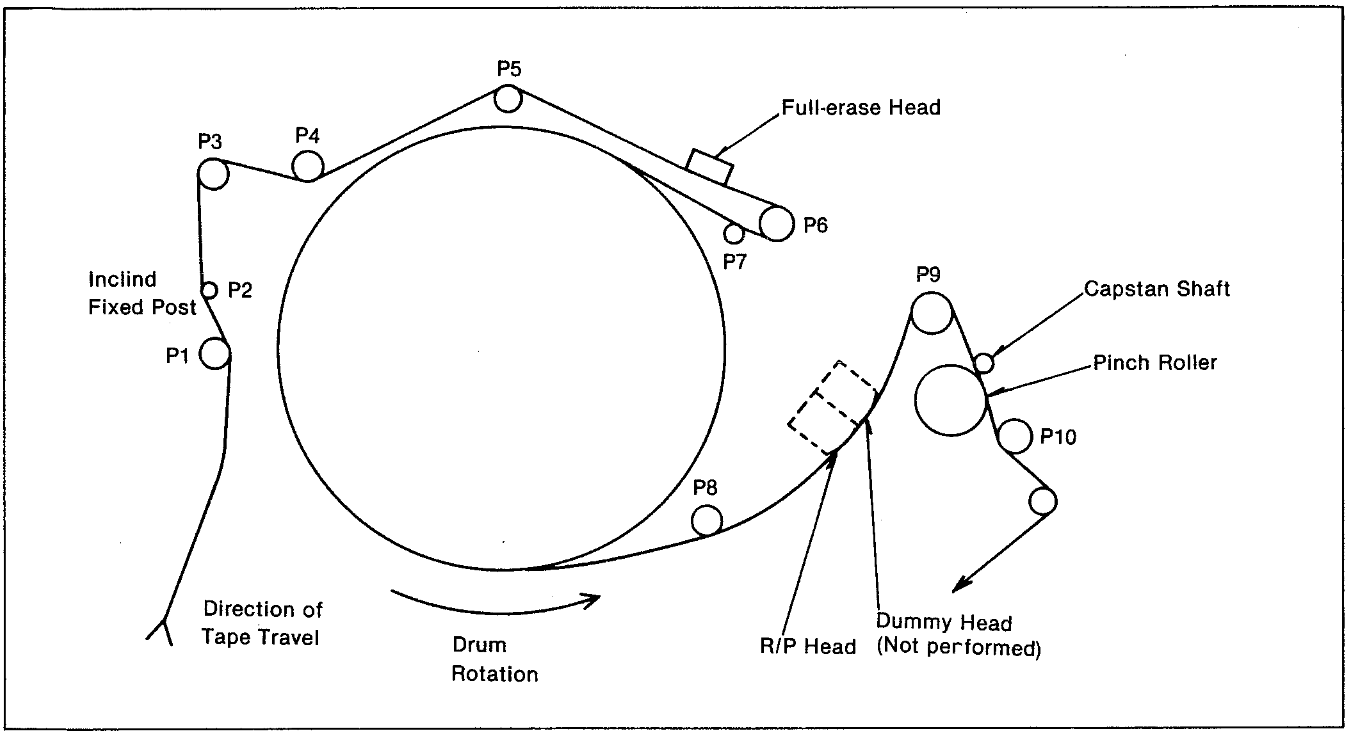


Fig. 11 Tape Transport System

Figure 11 shows the tape transport system of the MII VTR. In order to assure stable travel of the thin metal particle tape at a speed ranging from 0 (still) - to ×(±16), the angle at which the tape is wrapped around the inclined fixed posts is minimized. All other guide posts are a rotating type (same as the studio deck), thereby reducing tape traveling load.
Servo tension is applied to both the supply and take-up reels to control tape tension accurately and to prevent the tape from being damaged.

6. Wide Screen 16:9 Ratio Video

The AU-55H is equipped with a 16:9 picture ratio function which will allow it to be used in future High Definition/Wide Screen video broadcasting applications. High Definition broadcasting is slowly coming into every day use. For example, when connecting 16:9 ratio / 625 line camera, the signal will be recorded onto this machine complete with the associated wide screen information.

Upon playback, the machine feeds the wide screen information (superimposed in the C signal) to a suitable monitor and the "wide flag" signal automatically selects the wide mode.
See Figure 12.
This video system consists of two main sections, Wide Video Detection and Wide Input/Output Select.

6-1. Wide Screen Video Detection

In the MII VTR, wide screen video information (the "wide flag") is recorded onto tape to provide wide picture recognition on compatible equipment. The wide flag consists of a 5V DC pulse superimposed in lines 12 and 325 of the Pr signal (PAL) and lines 15 and 278 of the Pr signal (NTSC). When a tape containing this signal is played, the 5V DC is superimposed on the C signal (video output S1) and sent to the TV monitor for automatic "wide" selection.

6-2. Wide Input/Output Select Switch

The wide Input/Output information can be selected by the internal switches, SW701 on the Decoder & CTCM P.C.Board and SW801 on the TBC P.C.Board.
The functions of SW701 and SW801 are explained below.

SW701 : Wide Input Switch

WIDE:	Automatically records the wide screen video information (16:9 aspect ratio).
NORM:	For normal (4:3 aspect ratio) video input.

SW801 : Y/C Output Wide Select Switch

Selects whether to place the wide screen information on the YC output signals.

AUTO:	The wide screen information is automatically identified (if present), and is placed on the YC output signal.
ON:	The wide screen information is placed on the YC output signal.
OFF:	The wide screen information is not placed on the YC output signal.

6-3. Wide Screen Video Y/C Connectors

Output: S1 VIDEO OUT

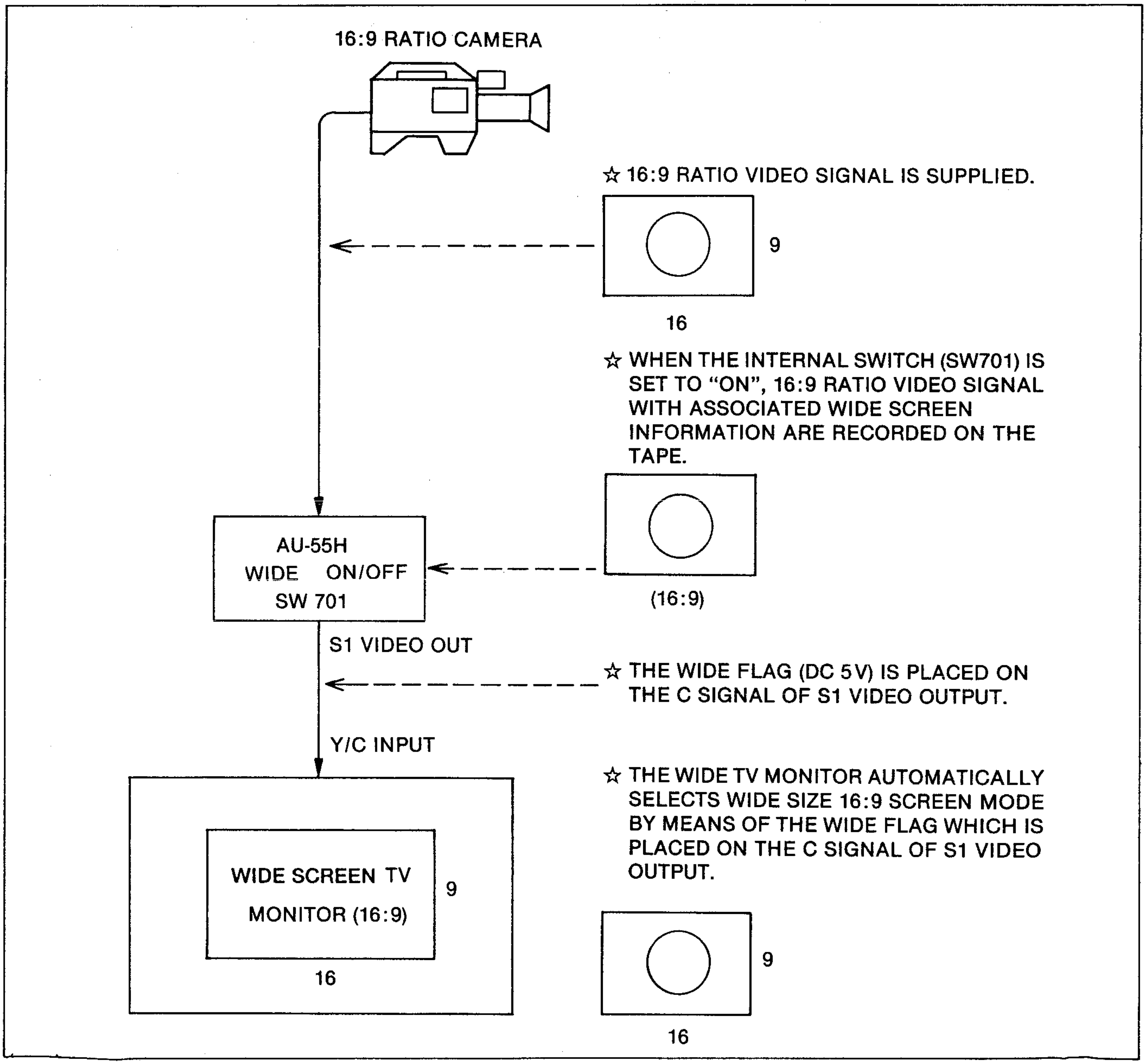
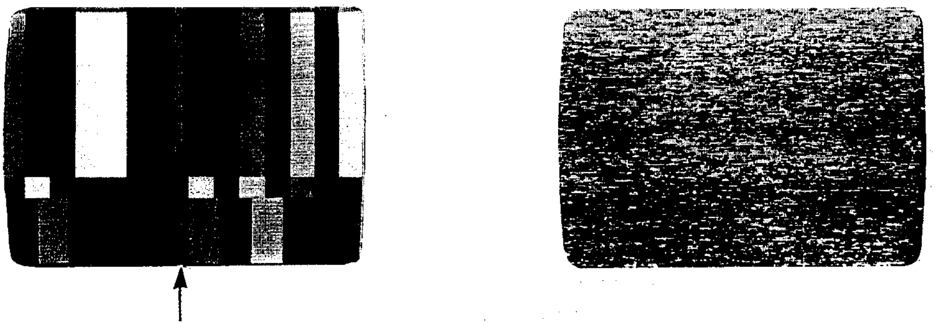

16:9 RATIO CAMERA
☆ 16:9 RATIO VIDEO SIGNAL IS SUPPLIED.
9
16
☆ WHEN THE INTERNAL SWITCH (SW701) IS SET TO "ON", 16:9 RATIO VIDEO SIGNAL WITH ASSOCIATED WIDE SCREEN INFORMATION ARE RECORDED ON THE TAPE.
AU-55H
WIDE ON/OFF
SW 701
(16:9)
S1 VIDEO OUT
☆ THE WIDE FLAG (DC 5V) IS PLACED ON THE C SIGNAL OF S1 VIDEO OUTPUT.
Y/C INPUT
☆ THE WIDE TV MONITOR AUTOMATICALLY SELECTS WIDE SIZE 16:9 SCREEN MODE BY MEANS OF THE WIDE FLAG WHICH IS PLACED ON THE C SIGNAL OF S1 VIDEO OUTPUT.
WIDE SCREEN TV
MONITOR (16:9)
9
16
9
16

Fig. 12 General Description of the Wide Screen System

7. Color Signal Check Function

The CMPNT/BATT CHECK button enables the color component (CTCM) of the recording or playback signal to be checked with a B/W vewfinder as shown in Figure 13.

At the same time, the recording Y, P_B and P_R components are indicated on the meter.


When color signal was recorded

When color signal was not recorded

A burst signal appears in the middle of the screen.

Fig. 13 Color Signal Check with Vewfinder

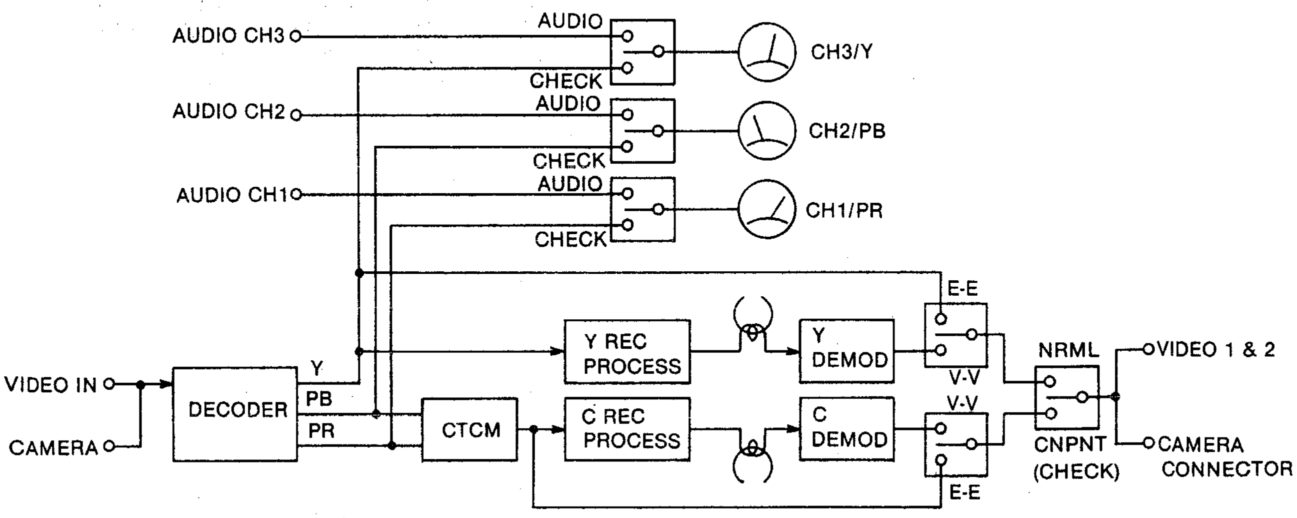

AUDIO CH3
AUDIO
CHECK
CH3/Y
AUDIO CH2
AUDIO
CHECK
CH2/PB
AUDIO CH1
AUDIO
CHECK
CH1/PR
E-E
VIDEO IN
CAMERA
DECODER
Y
PB
PR
CTCM
Y REC PROCESS
C REC PROCESS
Y DEMOD
C DEMOD
V-V
V-V
E-E
NRML
CNPNT (CHECK)
VIDEO 1 & 2
CAMERA CONNECTOR

Fig. 14 Color Signal Check Block Diagram

SECTION 2

MAINTENANCE & MECHANICAL ADJUSTMENT PROCEDURES

This section covers the disassembly method, maintenance procedures and mechanical adjustment procedures.

Danger of explosion if lithium battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

REGULAR MAINTENANCE

The MII-VTR is a complex piece of equipment. It contains many posts, rollers and heads etc. Which may wear with pro-longed use. Dust and dirt will also affect the operation of the machine. It is very important that require preventive maintenance (PM) is carried out according to the maintenance chart. This will ensure reliability, and the machine's specification.

Preventive maintenance should also be performed after any repairs are carried out on the equipment.

CONTENTS

DISASSEMBLY PROCEDURES 2- 1
1. Removal of Cassette Compartment Cover and Top Panel 2- 1
2. Removal of Bottom Panel 2- 1
3. Removal of Left Side Panel 2- 1
4. Opening of Right Side Panel 2- 1
5. Removal of Rear Panel 2- 1
6. Opening of Front Panel 2- 2
7. Removal of Cassette Compartment Unit 2- 2
8. Removal of Main Chassis Unit and Sub Chassis Unit 2- 2
9. Removal of Audio P.C.Board 2- 3
10. Removal of Video 1,2 and 3/4 P.C.Board (s) 2- 3
11. Removal of Driver P.C.Board 2- 4
12. Removal of Power Supply P.C.Board 2- 4
13. Removal of System Control/TC P.C.Board 2- 4
14. Removal of Meter and Volume P.C.Board 2- 4
15. Removal of Key P.C.Board 2- 5
16. Removal of Meter Select P.C.Board 2- 5
17. Removal of Servo P.C.Board 2- 5
18. Removal of Decoder/CTCM P.C.Board 2- 5
19. Removal of Audio I/O P.C.Board 2- 6
20. Removal of Jack Panel P.C.Board 2- 6
21. Removal of Headphones Jack P.C.Board 2- 6
22. Removal of Audio Monitor P.C.Board 2- 6

REGULAR MAINTENANCE 2- 7
1. Routine Maintenance Check 2- 7
2. Average Maintenance Chart 2- 8
3. Service Fixtures & Tools 2-10
4. Recommended Cleaning 2-11
  4-1. Required Material 2-11
  4-2. Recommended Schedule 2-11
  4-3. Head Cleaning 2-11
  4-4. Pinch Roller Cleaning Method 2-12
  4-5. Brush, Capstan, Post Guides Cleaning 2-12
  4-6. Cleaning of the Inside Machine 2-13
  4-7. Lubricate the Gears and Sliding Surfaces 2-14
5. Replacement and Adjustment of Mechanical Parts 2-15
  5-1. Replacement and Adjustment of Upper Drum 2-15
  5-2. Replacement and Adjustment of Drum Unit 2-17
  5-3. Replacement of Loading Belt 2-18
  5-4. Maintenance and Replacement of A/C Head Cleaner 2-19
  5-5. Replacement and Adjustment of Tape Guide Posts Rollers 2-19
  5-6. Replacement of Pinch Roller Arm Unit 2-25
  5-7. Replacement and Confirmation of Take-up and Supply Brake Units 2-25
  5-8. Replacement and Adjustment of A/C Head 2-27
  5-9. Replacement of Capstan Motor 2-33

5-10. Replacement of Full Erase Head ······ 2-33
5-11. Replacement of Loading Motor with Pulley ······ 2-34
5-12. Replacement of Tension Plate Spring ······ 2-34
5-13. Replacement of Small Reel Up/Down Motor ······ 2-34
5-14. Replacement, Adjustment and Confirmation of Pinch Roller Solenoid ······ 2-35
5-15. Replacement, Adjustment and Confirmation of Brake Solenoids ······ 2-37
5-16. Replacement and adjustment of the Idler Gear Unit ······ 2-38
5-17. Replacement of Small Reel Table Unit ······ 2-39
5-18. Replacement of Supply and the Take-Up Reel Tables ······ 2-39
5-19. Replacement of Loading Motor Thrust Bearing ······ 2-40
5-20. Replacement of the Small Reel Up/Down Motor Thrust Bearing ······ 2-41
5-21. Replacement of the Cassette Size Detection Switch (Micro SW) ······ 2-41
5-22. Replacement and Adjustment of the Emergency Eject Detect Switch (Leaf Switch) ······ 2-41
5-23. Replacement and Adjustment of Eject Detection Switch (Leaf Switch) ······ 2-42
5-24. Replacement and Adjustment of Small Reel Up/Down Limit Switches (Leaf Switch) ······ 2-43
5-25. Replacement of Recording Inhibit Switch ······ 2-44
5-26. Replacement of Drum Brush ······ 2-44

DISASSEMBLY PROCEDURES

This section describes disassembly steps of the cabinet parts, chassis unit and P.C.Boards in order to perform the necessary items for servicing.

1. Removal of Cassette Compartment Cover and Top Panel

1. Turn the power switch "ON" and push the eject button.
   Turn the power switch "OFF".
2. Unscrew 2 screws (A) as shown in Figure D1-1 and remove the cassette compartment cover.
3. Unscrew 4 screws (B) as shown in Figure D1-1 and remove the top panel.

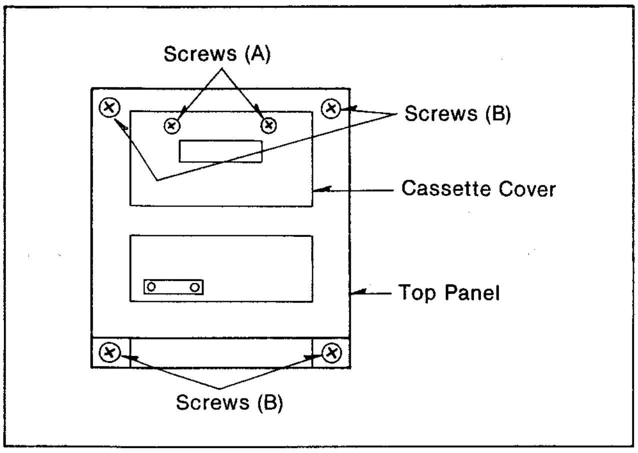

Screws (A)
Screws (B)
Cassette Cover
Top Panel
Screws (B)

Fig. D1-1 Top View

4. Then, you will be able to see the Mechanism Section.

2. Removal of Bottom Panel

1. Unscrew 4 screws (C) as shown in Figure D2-1 and remove the bottom panel.

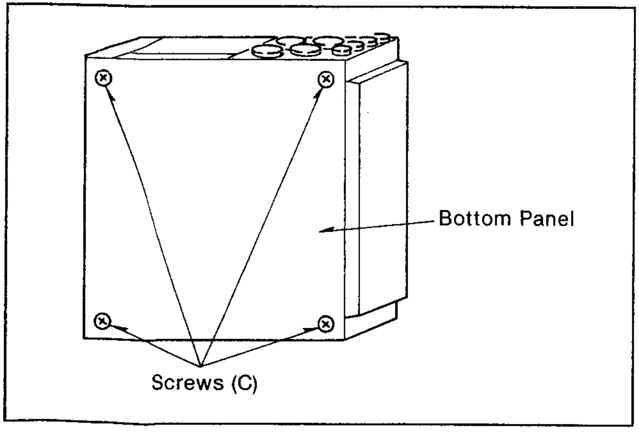

Bottom Panel
Screws (C)

Fig. D2-1 Bottom View

3. Removal of Left Side Panel

1. Remove the top and bottom panels (See paragraphs 1 and 2.)
2. Unscrew 3 screws (D) on the top side and 3 screws (D) on the bottom side as shown in Figure D3-1 so that the left side panel can be removed.

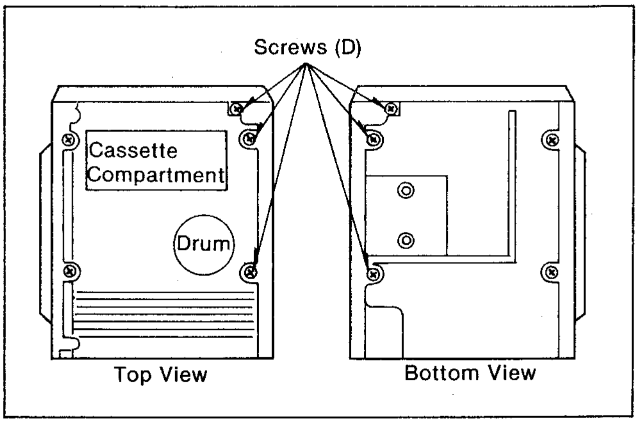

Screws (D)
Cassette Compartment
Drum
Top View
Bottom View

Fig. D3-1 Removal of Left Side Panel

4. Opening of Right Side Panel

1. Remove the top and bottom panels (See paragraphs 1 and 2).
2. Unscrew 3 screws (E) on the top side and 3 screws (E) on the bottom side as shown Figure D4-1 so that right side panel can be opened.

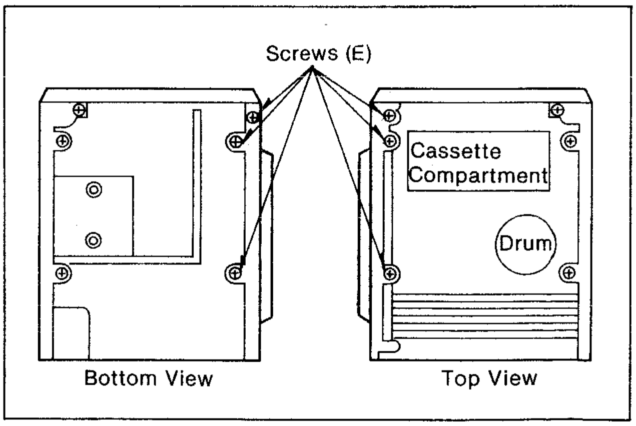

Screws (E)
Cassette Compartment
Drum
Bottom View
Top View

Fig. D4-1 Opening of Right Side Panel

5. Removal of Rear Panel

1. Remove the top, bottom and both side panels (See paragraphs 1, 2, 3 and 4).
2. Unscrew 4 screws (F) as shown in Figure D5-1 and remove the rear panel.

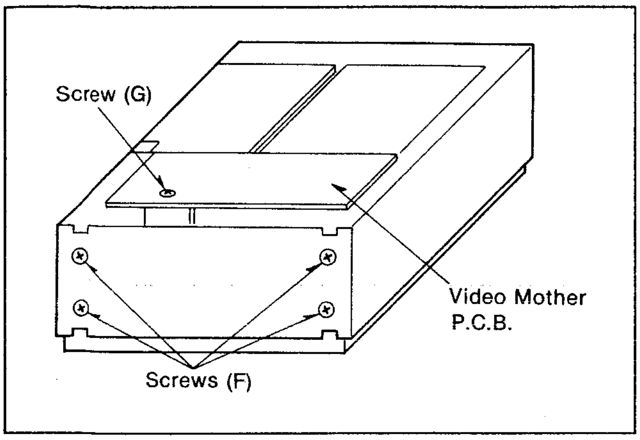

Screw (G)
Video Mother P.C.B.
Screws (F)

Fig. D5-1 Removal of Rear Panel

6. Opening of Front Panel

1. Remove the top, bottom and both side panels (See paragraphs 1, 2, 3 and 4).
2. Unscrew 2 screws (H) on the top side and 1 screw (I) on the bottom side as shown in Figure D6-1 so that the front panel can be opened.

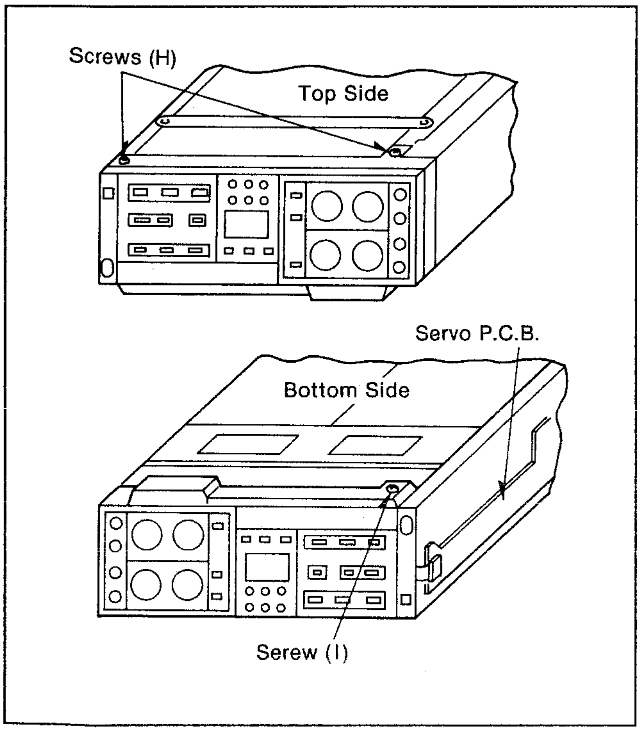

Screws (H)
Top Side
Servo P.C.B.
Bottom Side
Serew (I)

Fig. D6-1 Opening of Front Panel

7. Removal of Cassette Compartment Unit

1. Remove the top panel (See paragraph 1).
2. Keep the cassette compartment unit in the "cassette down" position.
3. Unscrew 4 screws (J) as shown in Figure D7-1.
4. Eject the cassette compartment by using the emergency eject function.
5. Disconnect the 2 connectors between the cassette compartment and main unit as shown in Figure D7-1 so that the cassette compartment can be removed.

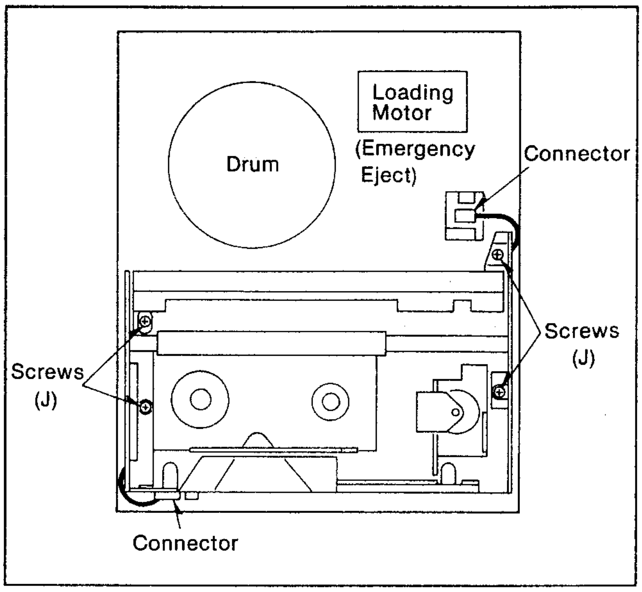

Loading Motor
(Emergency Eject)
Drum
Connector
Screws (J)
Screws (J)
Connector

Fig. D7-1 Removal of Cassette Compartment

8. Removal of Main Chassis Unit and Sub Chassis Unit

1. Remove and open all panels (See paragraphs 1, 2, 3, 4 and 6).
2. Remove the cassette compartment unit (See paragraph 7).
3. Remove the video 1 and audio P.C.Boards (See paragraphs 9 and 10).
4. Unscrew 4 screws (K) as shown Figure D8-1.
5. Disconnect all connectors between the main chassis unit and main unit so that the main chassis unit can be removed.

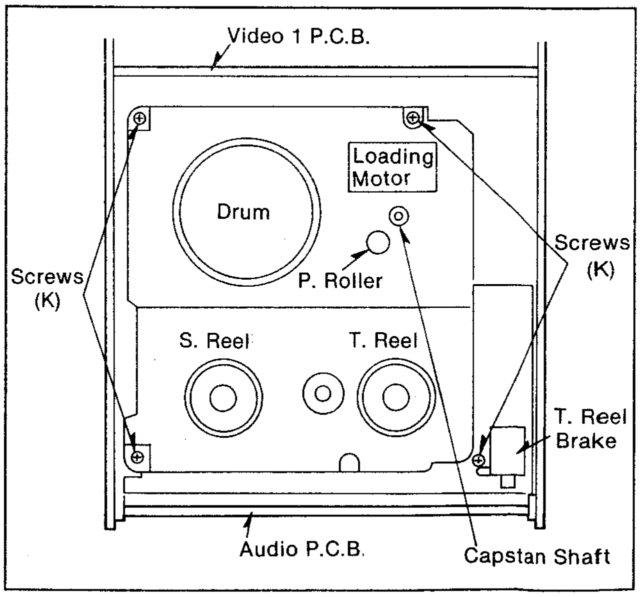

Video 1 P.C.B.
Loading Motor
Drum
P. Roller
Screws (K)
Screws (K)
S. Reel
T. Reel
T. Reel Brake
Audio P.C.B.
Capstan Shaft

Fig. D8-1 Removal of Main Chassis Unit

6. Unscrew the screw (L) as shown in Figure D8-2.
7. Disconnect the cable between the drum motor and reel bace P.C.Board.
8. Unscrew 6 screws (M) as shown in Fugure D8-2 so that the sub chassis can be removed.

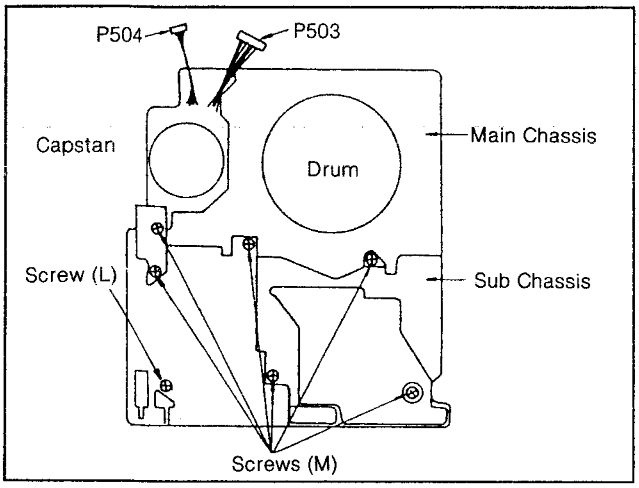

P504
P503
Capstan
Drum
Main Chassis
Screw (L)
Sub Chassis
Screws (M)

Fig. D8-2 Removal of Sub Chassis

9. Removal of Audio P.C.Board

1. Remove the top panel (See paragraph 1).
2. Unscrew 2 screws (A) as shown Figure D9-1.
3. Carefully pull out the audio P.C.Board.
   If it is difficult to pull out, open the front panel (see paragraph 6).

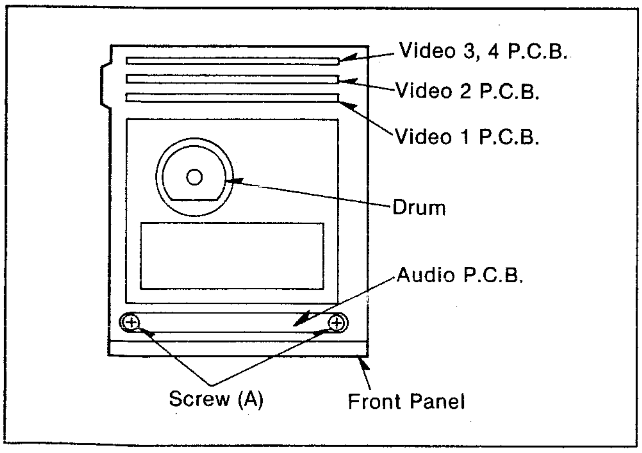

Video 3, 4 P.C.B.
Video 2 P.C.B.
Video 1 P.C.B.
Drum
Audio P.C.B.
Screw (A)
Front Panel

Fig. D9-1 Removal of Audio P.C.Board

4. The audio P.C.Board can be extended by using the extender VFK0859 as shown in Figure D9-2 in order to perform the electrical adjustments and trouble shooting easily.

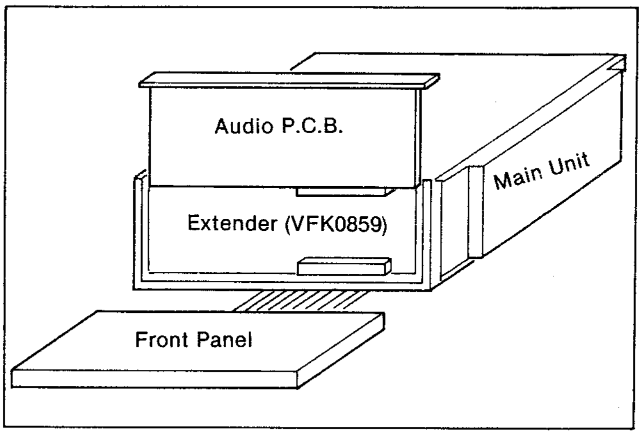

Audio P.C.B.
Main Unit
Extender (VFK0859)
Front Panel

Fig. D9-2 Extension of Audio P.C.Board

10. Removal of Video 1, 2 and 3/4 P.C.Board (s)

1. Remove the top panel (See paragraph 1).
2. Pull out the video 1, 2 and/or 3 with 4 P.C.Board(s) so that the P.C.Board(s) can be removed as shown in Figure D10-1.
3. The video P.C.Boards can be extended by using the extender VFK0859 as shown Figure D10-1 in order to perform the electrical adjustments and trouble shooting easily.

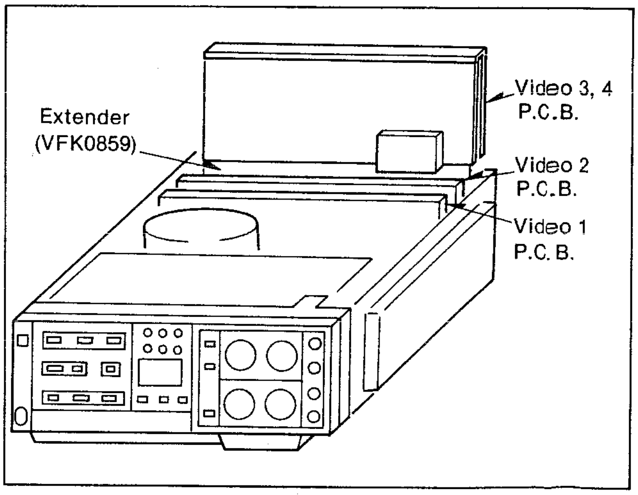

Extender (VFK0859)
Video 3, 4 P.C.B.
Video 2 P.C.B.
Video 1 P.C. B.

Fig. D10-1 Removal of Video P.C.Board (s) and Extension of Video P.C.Board (s)

11. Removal of Driver P.C.Board

1. Remove the bottom panel (See paragraph 2).
2. Unscrew 4 screws (B) as shown in Figure D11-1.
3. Disconnect all cables between the driver P.C.Board and main unit so that the driver P.C.Board can be removed.

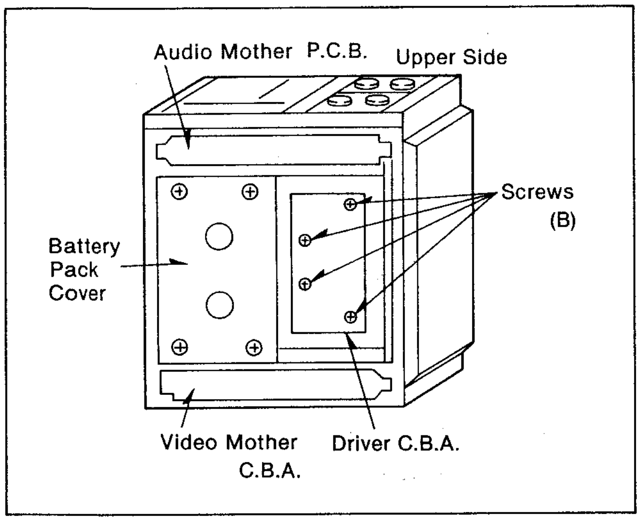

Audio Mother P.C.B.
Upper Side
Screws (B)
Battery Pack Cover
Video Mother C.B.A.
Driver C.B.A.

Fig. D11-1 Removal of Driver P.C.Board

12. Removal of Power Supply P.C.Board

1. Remove the bottom panel (See paragraph 2).
2. Remove the driver P.C.Board (See paragraph 11).
3. Unscrew 4 screws (C) as shown in Figure D12-1.
4. Disconnect all cable between the power supply P.C.Board and main unit so that the power supply can be removed.

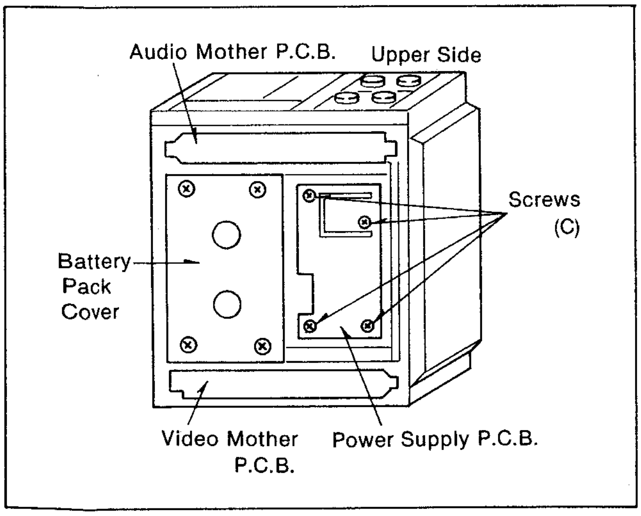

Audio Mother P.C.B.
Upper Side
Screws (C)
Battery Pack Cover
Video Mother P.C.B.
Power Supply P.C.B.

Fig. D12-1 Removal of Power Supply P.C.Board

13. Removal of System Control/TC P.C.Board

1. Open the front panel (See paragraph 6).
2. Unscrew 4 screws (D) as shown in Figure D13-1.
3. Disconnect all connectors between the system control/TC P.C.Board and main unit and all connectors between the system control/TC P.C.Board and front panel so that the system control/TC board can be removed.

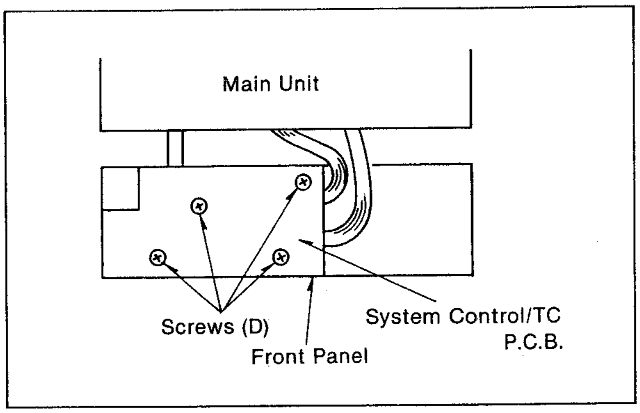

Main Unit
Screws (D)
Front Panel
System Control/TC P.C.B.

Fig. D13-1 Removal of System Control/TC P.C.Board

14. Removal of Meter and Volume P.C.Board

1. Open the front panel (See paragraph 6).
2. Remove the system control/TC P.C.Board.
3. Unscrew 5 screws (E) as shown in Figure D14-1.
4. Disconnect all connectors between the meter and volume P.C.Board and main unit and all connectors between the meter and volue P.C.Board and front panel so that the meter and volume P.C.Board can be removed.

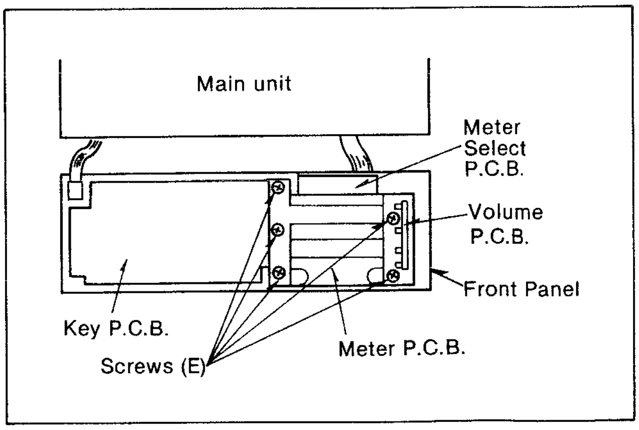

Main unit
Meter Select P.C.B.
Volume P.C.B.
Front Panel
Key P.C.B.
Screws (E)
Meter P.C.B.

Fig. D14-1 Removal of Meter and Volume P.C.Board

15. Removal of Key P.C.Board

1. Open the front panel (See paragraph 6).
2. Remove the system control/TC P.C.Board (See paragraph 13).
3. Remove the meter P.C.Board and volume P.C.Board (See paragraph 14).
4. Unscrew 7 screws (F) as shown in Figure D15-1.
5. Disconnect the cables between the key P.C.Board and system control/TC P.C.Board so that the key P.C.Board can be removed.

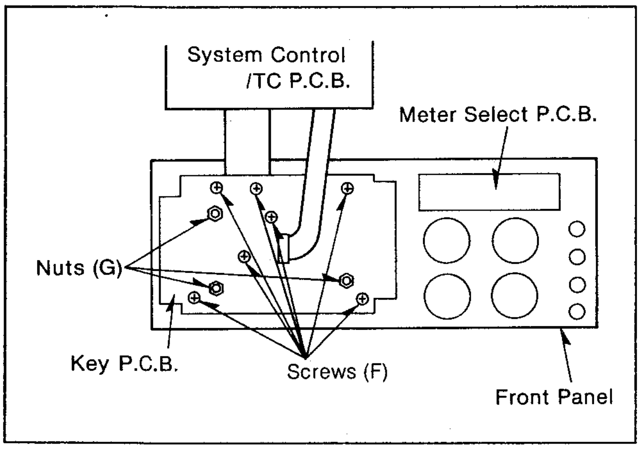

System Control
/TC P.C.B.
Meter Select P.C.B.
Nuts (G)
Key P.C.B.
Screws (F)
Front Panel

Fig. D15-1 Removal of Key P.C.Board

16. Removal of Meter Select P.C.Board

1. Open the front panel (See paragraph 6).
2. Remove the system control/TC PC.Board (See paragraph 13).
3. Remove the meter P.C.Board and volume P.C.Board (See paragraph 14).
4. Unscrew 2 screws (H) as shown in Figure D16-1.
5. Disconnect the cable between the meter select P.C.Board and meter P.C.Board so that the meter select P.C.Board can be removed.

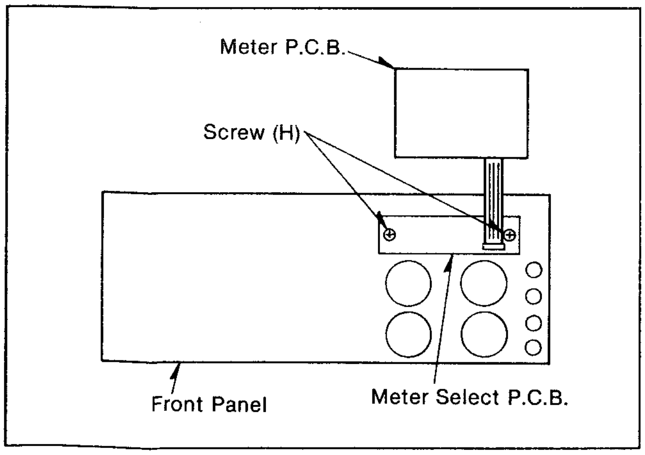

Meter P.C.B.
Screw (H)
Front Panel
Meter Select P.C.B.

Fig. D16-1 Removal of Meter Select P.C.Board

17. Removal of Servo P.C.Board

1. Remove the left side panel (See paragraph 3).
2. Unscrew 4 screws (I) as shown in Figure D17-1.
3. Disconnect all cables between the servo P.C.Board and main unit so that the servo P.C.Board can be removed.

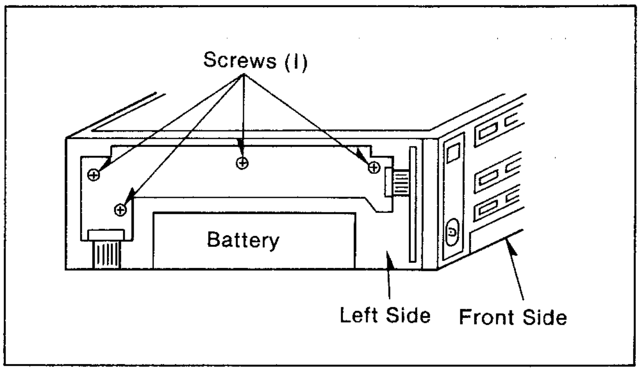

Screws (I)
Battery
Left Side
Front Side

Fig. D17-1 Removal of Servo P.C.Board

18. Removal of Decoder/CTCM P.C.Board

1. Open the right side panel (See paragraph 4).
2. Unscrew 6 screws (J) as shown in Figure D18-1.
3. Disconnect all cables between the decoder/CTCM P.C.Board and main unit so that the decoder/CTCM P.C.Board can be removed.

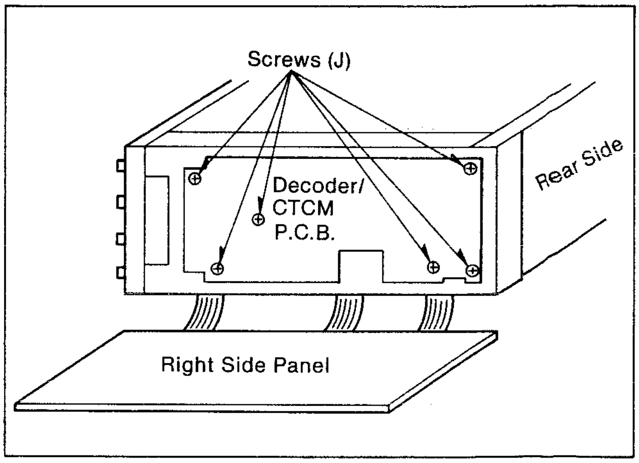

Screws (J)
Decoder/
CTCM
P.C.B.
Rear Side
Right Side Panel

Fig. D18-1 Removal of Decoder/CTCM P.C.Board

19. Removal of Audio I/O P.C.Board

1. Open the right side panel (See paragraph 4).
2. Disconnect the cables between the audio XLR connectors and audio I/O P.C.Board.
3. Disconnect the cable between the audio I/O P.C.Board and 26pin camera connector.
4. Disconnect the cables between the main unit and audio I/O P.C.Board so that the audio I/O P.C.Board can be removed.
5. Unscrew 6 screws (K) as shown in Figure D19-1.

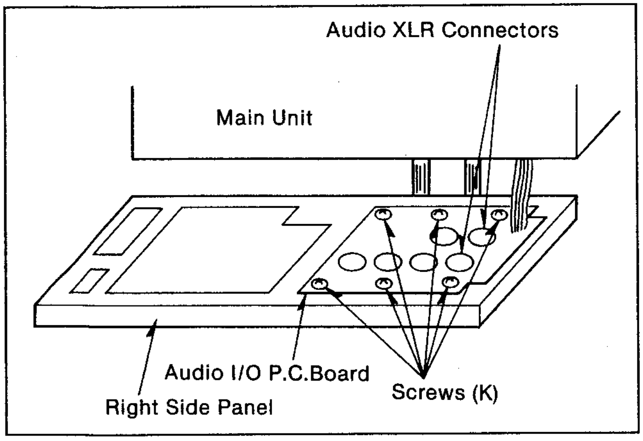

Audio XLR Connectors
Main Unit
Audio I/O P.C.Board
Screws (K)
Right Side Panel

Fig. D19-1 Removal of Audio I/O P.C.Board

20. Removal of Jack Panel P.C.Board

1. Open the right side panel (See paragraph 4).
2. Disconnect the cables between the jack panel P.C.Board and 26pin camera connector.
3. Disconnect the cable between the main unit (power supply P.C.Board) and 26pin camera connector (The drive P.C.Board should be opened).
4. Disconnect the cables between main unit and jack panel P.C.Board.
5. Unsolder the lead wires between the BNC jacks and the jack panel P.C.Board.
6. Unscrew 6 screws (L) as shown in Figure D20-1.

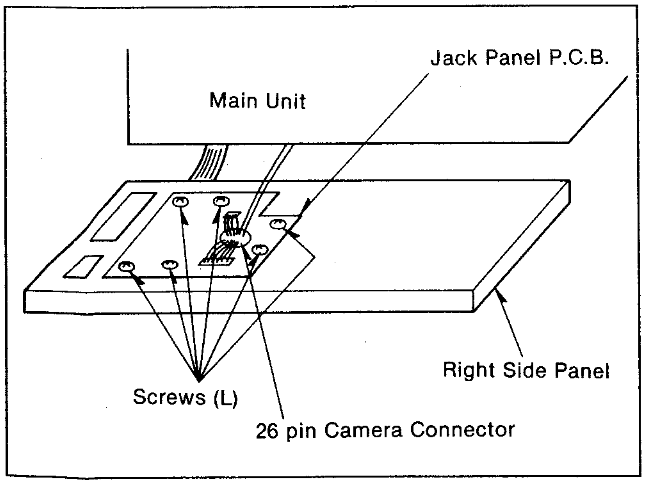

Jack Panel P.C.B.
Main Unit
Right Side Panel
Screws (L)
26 pin Camera Connector

Fig. D20-1 Removal of Jack Panel P.C.Board

21. Removal of Headphones Jack P.C.Board

1. Open the right side panel (See paragraph 4).
2. Pull out the rubber cap on the headphones jack.
3. Unscrew 3 screws (M) as shown in Figure D21-1.
4. Disconnect the cable between the audio monitor P.C.Board and headphones jack P.C.Board so that the headphones jack P.C.Board can be removed.

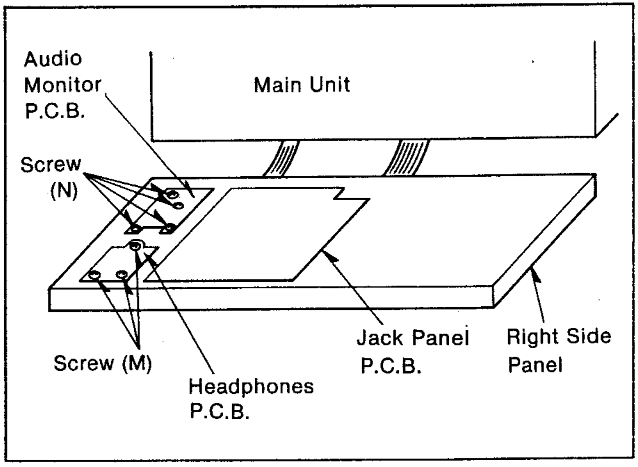

Audio Monitor P.C.B.
Main Unit
Screw (N)
Screw (M)
Jack Panel P.C.B.
Right Side Panel
Headphones P.C.B.

Fig. D21-1 Removal of Headphones Jack P.C.Board and Audio Monitor P.C.Board

22. Removal of Audio Monitor P.C.Board

1. Open the right side panel (See paragraph 4).
2. Pull out the monitor level knob.
3. Unscrew 4 screws (N) as shown in Figure D21-1.
4. Disconnect the cable between the headphones jack P.C.Board and audio monitor P.C.Board.
5. Disconnect all cables between the main unit and audio monitor P.C.Board so that the audio monitor P.C.Board can be removed.

REGULAR MAINTENANCE

The purpose of periodic maintenance is to preserve the function of this machine throughout its useful life. The user or service dealer should perform these maintenance procedures regularly to ensure that maximum utility is obtained from the machine.

REGULAR MAINTENANCE IS NECESSARY

The MII-VTR is a complicated piece of equipment. It contains many belts, rollers, heads etc., which become worn and deteriorate as time goes by, causing trouble. Dust and dirt will also impede the proper function of the machine. In light of this, it is very important that overall maintenance be done according to the maintenance chart to maintain the functions of the MII-VTR, and to avoid accidental problems.
This maintenance should also be performed after any repairs are done on the equipment.

REGULAR MAINTENANCE IS RECOMMENDED

The MII-VTR used for broadcast and professional applications requires particular attention for several reasons. The installation conditions and applications are not always the best. Long use times or poor environmental conditions may adversely affect the lifespan and performance of the machine.
Regular maintenance assures that the purchaser obtains the maximum value for his expenditure.

1. Routine Maintenance Check

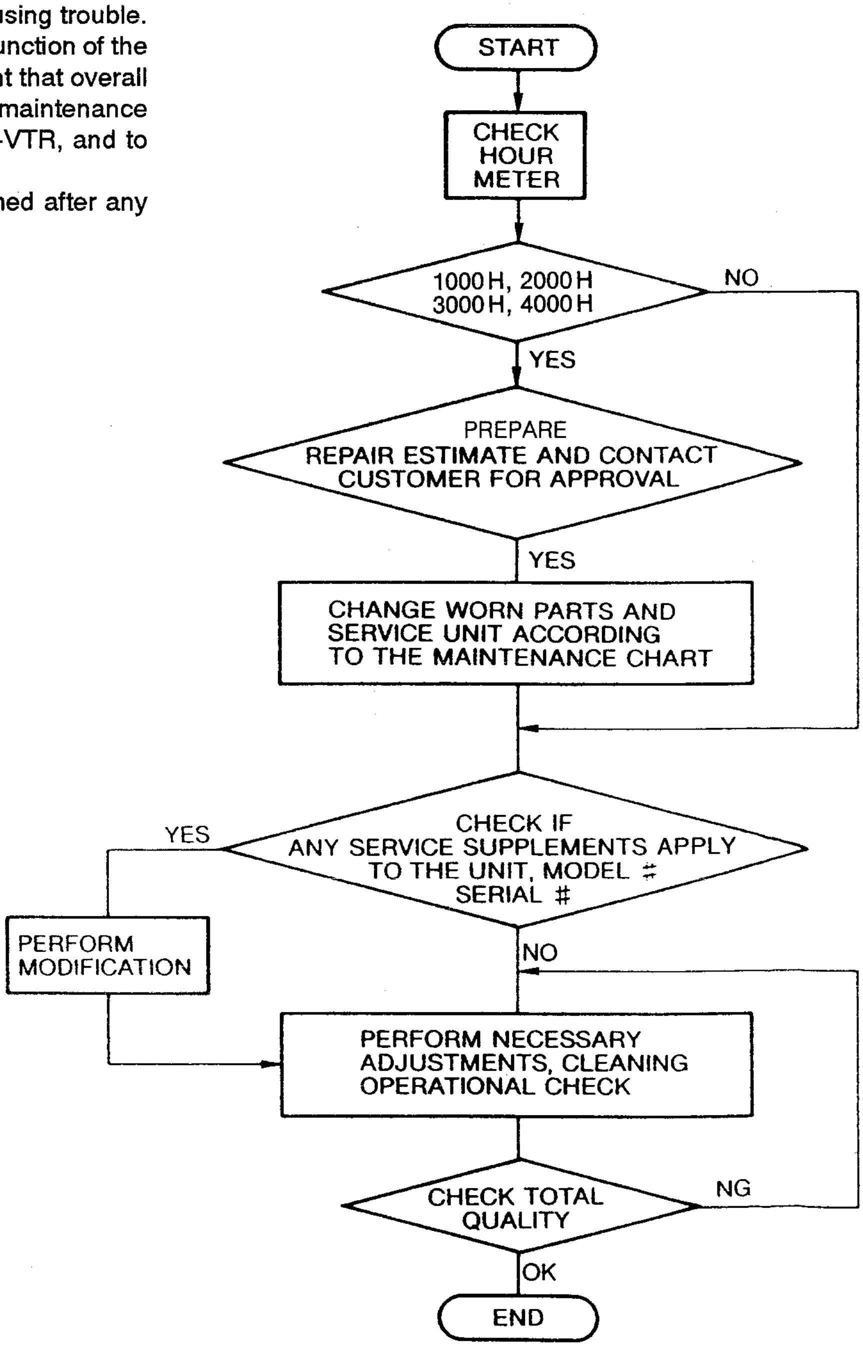

START
CHECK HOUR METER
1000H, 2000H 3000H, 4000H
NO
YES
PREPARE REPAIR ESTIMATE AND CONTACT CUSTOMER FOR APPROVAL
YES
CHANGE WORN PARTS AND SERVICE UNIT ACCORDING TO THE MAINTENANCE CHART
YES
CHECK IF ANY SERVICE SUPPLEMENTS APPLY TO THE UNIT, MODEL # SERIAL #
PERFORM MODIFICATION
NO
PERFORM NECESSARY ADJUSTMENTS, CLEANING OPERATIONAL CHECK
CHECK TOTAL QUALITY
NG
OK
END

Fig. M1-1 Routine Maintenance Check

2. Average Maintenance Chart

● Replacement

Parts Name	Parts No.		Location No.	Using Hours				Replacement Procedure (Paragraph)
	NTSC	PAL		1000	2000	3000	4000	
Upper Drum	VEH0582	VEH0586	(1)	●		●		5-1
Pinch Roller	VXP0805	VXP0805	(2)	●	●	●	●	5-6
Supply Brake Unit	VXL1574	VXL1574	(3)		●		●	5-7
Take-up Brake Unit	VXL1575	VXL1575	(4)		●		●	5-7
Loading Belt	VDV0162	VDV0162	(5)	●	●	●	●	5-3
P1 Arm Unit	VXL1716	VXL1716	(6)				●	5-5
P3 Roller Unit	VXP0936	VXP0936	(7)		●		●	5-5
P4 Roller Unit	VDP1100	VDP1100	(8)				●	5-5
P5 Roller Unit	VXP0936	VXP0936	(9)		●		●	5-5
P6 Roller Unit	VXP0937	VXP0937	(10)		●		●	5-5
P7 Roller Post Unit	VXP0938	VXP0938	(11)		●		●	5-5
P8 Roller Unit	VXP0936	VXP0936	(12)		●		●	5-5
P9 Roller Unit	VXP0815	VXP0815	(13)		●		●	5-5
P10 Roller Unit	VDP1100	VDP1100	(14)				●	5-5
P11 Roller Unit	VXP0937	VXP0937	(15)		●		●	5-5
Loading Motor Thrust Bearing	VDB0835	VDB0835	(32)				●	5-19
Up/Down Motor Thrust Bearing	VXP0848	VXP0848	(16)				●	5-20
Pinch Roller Solenoid	VSJ0077	VSJ0077	(17)				●	5-14
A/C Head	VBR0180	VBR0180	(18)		●		●	5-8
Drum Unit	VEG0984	VEG1005	(19)		●		●	5-2
Capstan Motor Unit	VEM0322	VEM0322	(20)		●		●	5-9
F/E Head	VBS0040	VBS0040	(21)		●		●	5-10
REC Inhibit Switch	VEK3220	VEK3220	(22)				●	5-25
Cassette Size Det. Switch	VSH0031	VSH0031	(23)				●	5-21
Emergency Eject Det. Switch	VSH0026	VSH0026	(24)				●	5-22
Eject Det. Switch	VSH0026	VSH0026	(25)				●	5-23
Small Reel Up/Down Switches (2PCS)	VSH0026	VSH0026	(26)				●	5-24
Loading Motor with Pulley	VEM0270	VEM0270	(27)				●	5-11
Tension Plate Spring Unit	VXA2925	VXA2925	(37)			●		5-12
Supply Reel Table Unit	VXR0218	VXR0218	(29)				●	5-18
Take-up Reel Table Unit	VXR0161	VXR0161	(30)				●	5-18
Small Reel Table Unit	VXR0163	VXR0163	(31)				●	5-17
Small Reel Up/Down Motor	VRD0029	VRD0029	(28)				●	5-13
Take-up Brake Solenoid	VSJ0077	VSJ0077	(33)				●	5-15
Supply Brake Solenoid	VSJ0075	VSJ0075	(34)				●	5-15
Idler Gear Unit	VXP0929	VXP0929	(35)				●	5-16
*A/C Head Cleaning Pad	VMF0366	VMF0366	(36)	●	●	●	●	5-4
Drum Brush	VXS0024	VXS0024	(38)		●		●	5-26

Note: The A/C head cleaning pad should be rotated (120°) every 300 ~ 400 hours.
(More details, refer to the maintenance and replacement procedures)

Fig. M2-1 Average Maintenance Chart

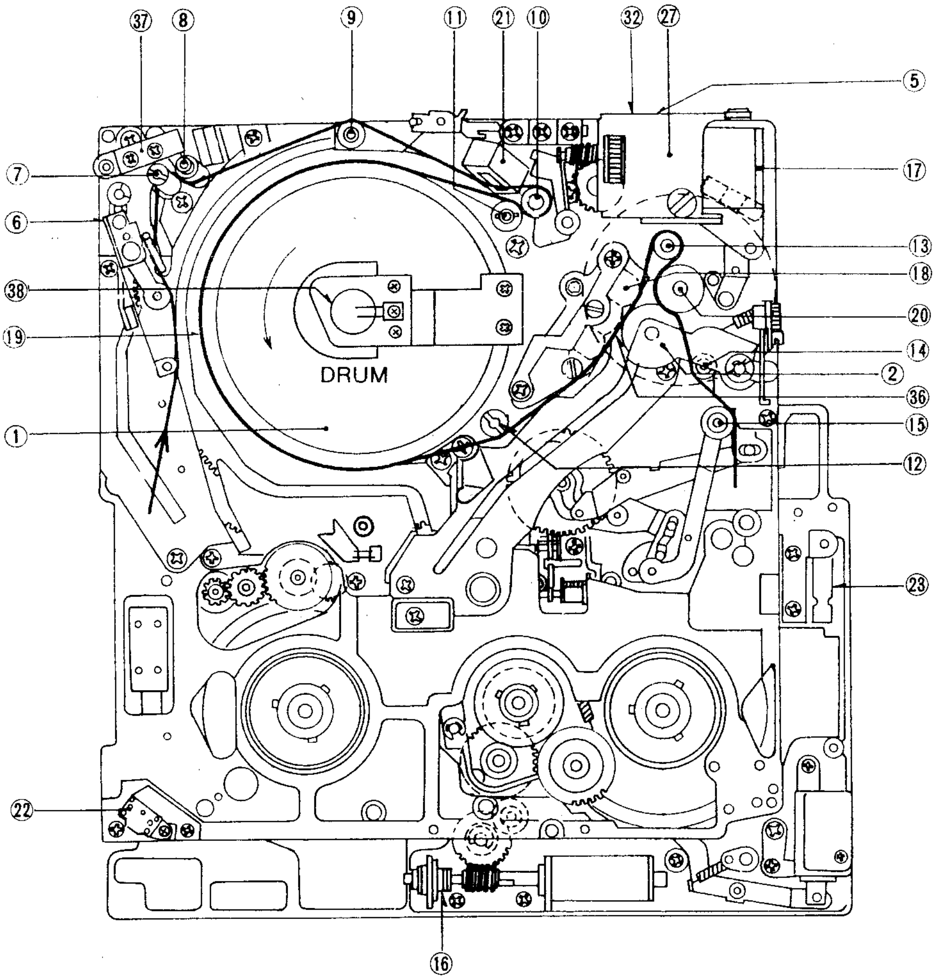

㊲
⑧
⑨
⑪
㉑
⑩
㉜
㉗
⑤
⑰
⑦
⑥
⑬
⑱
㊳
⑳
⑲
⑭
②
㊱
DRUM
①
⑮
⑫
㉓
㉒
⑯

Fig. M2-2 Maintenance Parts Location on Main Chassis

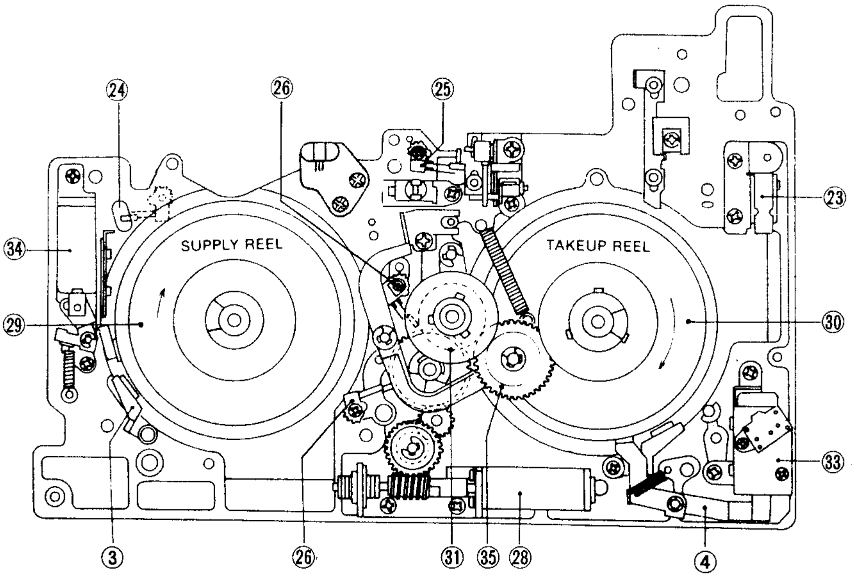
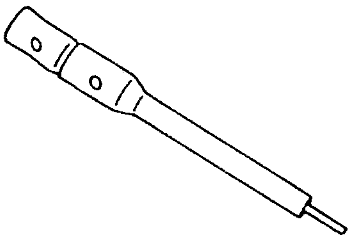
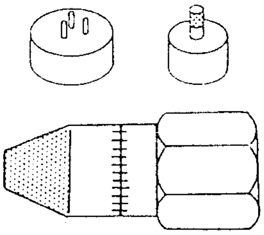
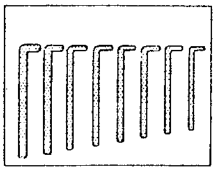
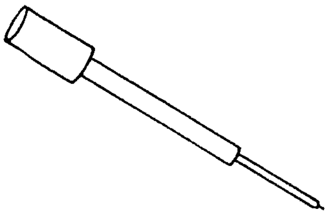
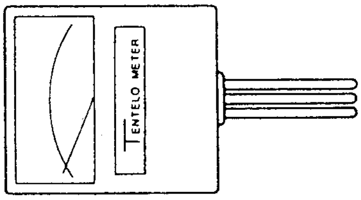
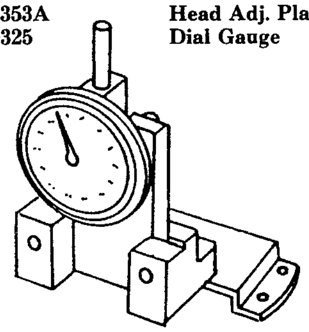
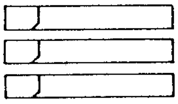
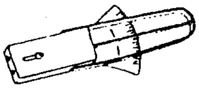
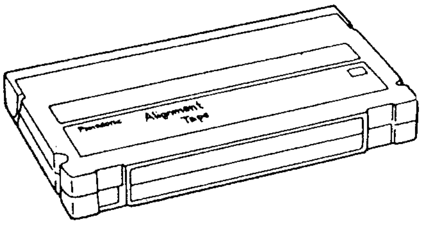
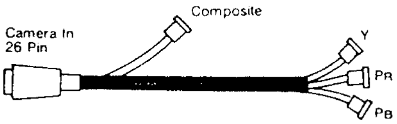
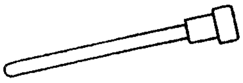
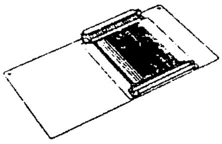
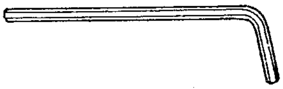
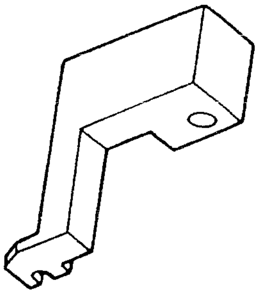
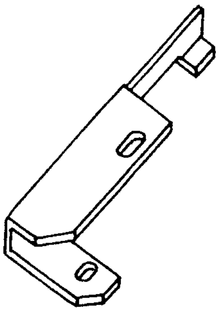
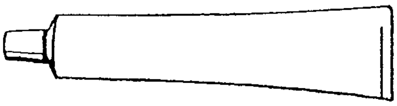
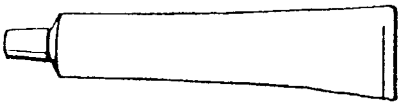

㉔
㉖
㉕
㉓
㉞
SUPPLY REEL
TAKEUP REEL
㉙
㉚
㉝
③
㉖
㉛
㉟
㉘
④

Fig. M2-3 Maintenance Parts Location on Main Chassis

3. Service Fixtures & Tools

To perform the complete maintenance and mechanical adjustments, the following service fixtures and tools are required.

VFK0293 Post Driver 	**VFK0133** Dial Torque Gauge **VFK0354** Adaptor for VFK0133 **VFK0134** Adaptor for VFK0133 	**VFK0326** Hex. Wrench Set 
VFK0357 Eccentric Screwdriver (1.5mm) 	**VFK0132** Back Tension Meter (Tentelometer) 	**VFK0353A** Head Adj. Plate **VFK0325** Dial Gauge 
VFK27 Head Cleaning Stick  **VFK0758 (2000g)** Fan Type Tension Gauge **VFK062 (100g)** 	**VFM7089EAG (NTSC)** Alignment Tape **VFM7189EG (PAL)** 	**VFK0385** Component Input Cable 
VFK0692 Pinch Position (2) Pin 	**VFK0859** Extension Board  **VFK0410** Hex Wrench 	**VFK0599A** Pinch Position Adj Tool 
VFK0691 Pinch Position (1) Plate 	**MOR265** Morlytone Grease (Black) (for metal part) 	**VFK0749** Froiral Grease (White) (for plastic part) 

4. Recommended Cleaning

This Section describes the recommended cleaning methods. The frequent cleaning, as described will assure optimum performance and longer life of MII VTR.

4-1. Required Material

1. 100% Isopropyl Alcohol (Completely Denatured Alcohol from Pharmacist)
2. Head Cleaning stick VFK27 or Lint-Free Cloth
3. Canned Air
4. Molyton grease Panasonic Part # MOR265
5. Type of grease Froiral G-31SB
   Panasonic Part # VFK0749

4-2. Recommended Schedule

10Hrs of Operation (Daily):
Cleaning of Upper Drum & A/C Head Assy.

50Hrs of Operation (Weekly):
Cleaning of Upper and Lower Drum, A/C Head, Pinch Roller.

200Hrs of Operation (Monthly):
Cleaning of Tape Post Guides, Capstan, Reel Base, Brakes, Cass Assy, Slip Rings, & Brush Assy.

Yearly:
Clean out Machine with Canned Air and Refer to the Maintenance Chart for Parts Replacement (See Fig. M2-1, M2-2 and M2-3).
Lubricate Gears and Mech. Parts/Check Tape Tension.

Note: Frequency of maintenance, depends on actual use. These intervals should reflect your actual situation and usage.

4-3. Head Cleaning

Note: All procedures should be performed with Power OFF

A. Upper Drum Cleaning Method (10Hrs of Operation)

Clean heads by applying even pressure and rotating upper drum (as shown in Figure M4-3-1). Never wipe in an up and down motion.

1. Clean with Alcohol
2. Wipe dry

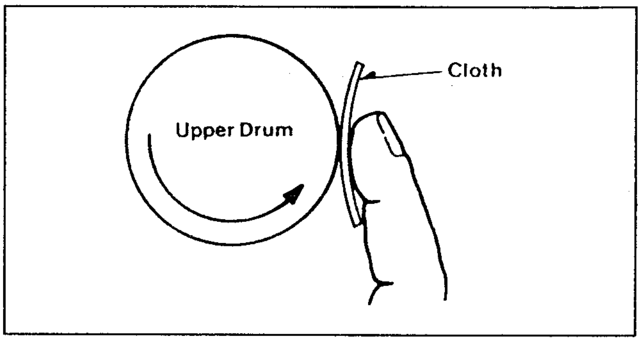


Fig. M4-3-1 Video Head Cleaning

B. Lower Drum Cleaning Method (50Hrs of Operation)

Clean the rabbet guide with an alcohol soaked, sharpened toothpick. At this time use an inspection mirror to check for "scoring" or wear to drum assy.

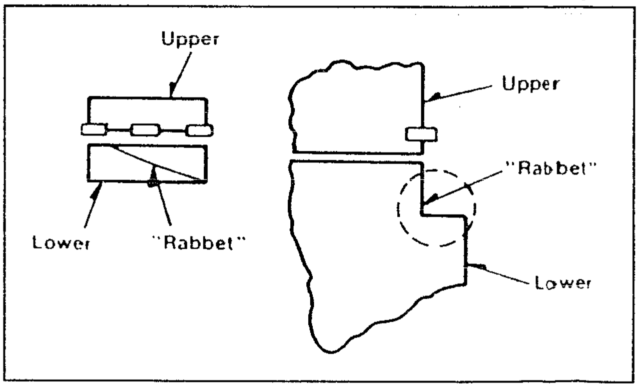


Fig. M4-3-2 Lower Drum Cleaning

C. A/C Head Cleaning Method(10Hrs of Operation)

Wipe the front surfaces of the heads with a cleaning cloth or a Kim Wipe moistened with alcohol. Wipe the surfaces with a dry cloth after cleaning. Wipe only in a side to side direction. Remove E-ring and take off the pinch arm to have better access to the A/C stack.

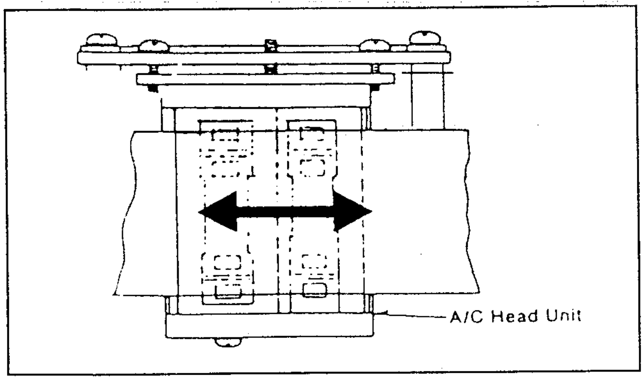


Fig. M4-3-3 A/C Head Cleaning

4-4. Pinch roller, Cleaning Method (50Hrs of Operation)

A. Pinch Rollers should be cleaned with a 50% solution of Isopropyl Alcohol and a clean Lint-Free Cloth and wipe in a up and down motion.

1. Wipe with 50% Isopropyl solution
2. Wipe with a clean dry Lint-Free Cloth and repeat until no rubber (dirt) comes off.

Never use straight alcohol. It will disintegrate the rubber.

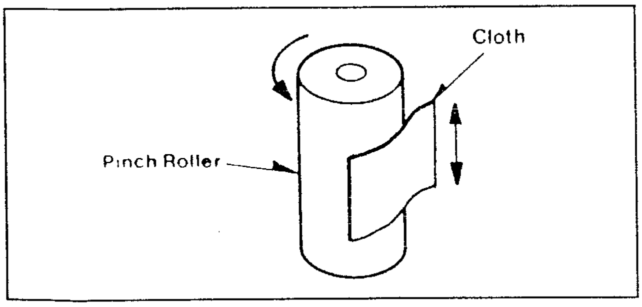


Fig. M4-4-1 Pinch Roller Cleaning

4-5. Brush, Capstan, Post Guides Cleaning (200Hrs of Operation)

A. Brush Cleaning

1. Unscrew 2 screws and remove the brush unit.
2. With Alcohol soaked Lint-Free Cloth, carefully clean the brushes and brush contact.
3. Reassemble the brush unit.

Note: Make sure that the brushes is positioned at the centre of drum shaft.

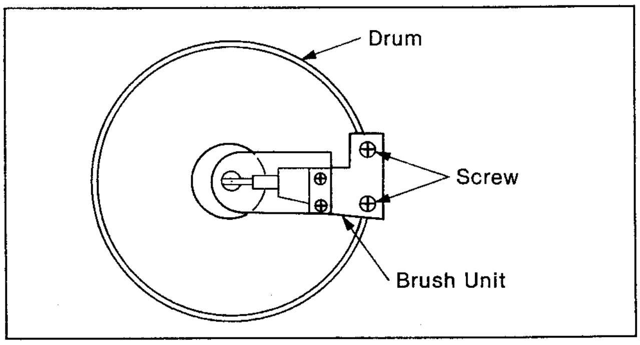


Fig. M4-5-1 Brush Cleaning

B. Capstan Cleaning

Capstan shaft should be cleaned with alcohol.

1. Wipe with alcohol soaked Lint-Free Cloth.
2. Wipe with dry Lint-Free Cloth.

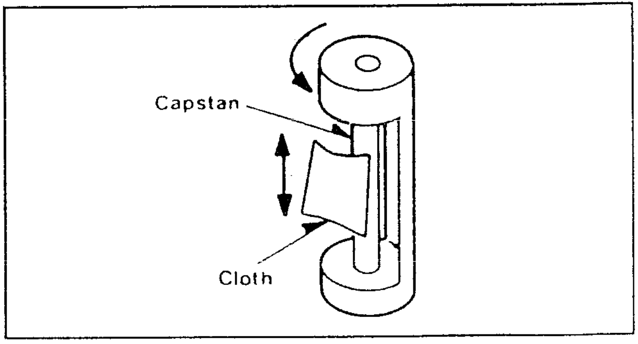


Fig. M4-5-2 Capstan Shaft Cleaning

C. Post Guides Cleaning

Post guides P1 through P11 should be pushed down to form a gap. Cleaning should be done with a dry Lint-Free Cloth only, so that ball bearings do not get damaged.

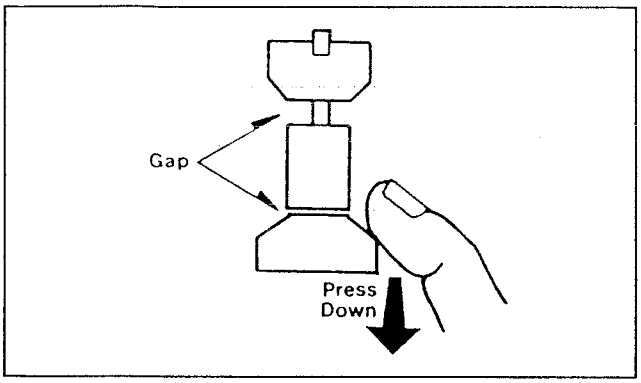


Fig. M4-5-3 Post Guide Cleaning

D. P2 post Cleaning

Fixed post (P2) should be cleaned with alcohol. Wipe Lint-Free Cloth in same direction as tape travel. At this time you should check for a small groove (wear) where the tape edge travels.

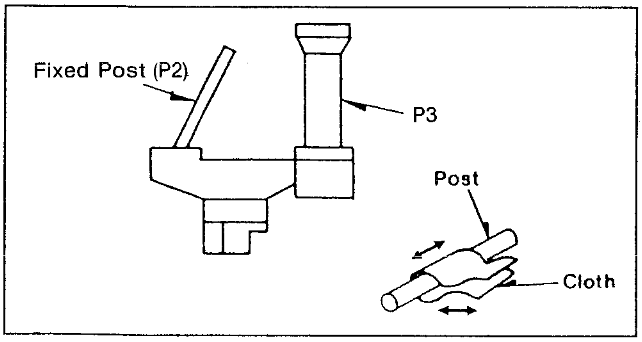


Fig. M4-5-4 Fixed Post Cleaning

4-6. Cleaning of the Inside Machine (1 year of Operation)

A. Mechanical Section

a. Inside Machine

Check inside the machine. If dust has been collected inside the machine, remove the carriage and exterior panels and blow out the dust with an air-gun, as shown in Figure M4-6-1.

Note: Cover video heads as shown in Figure M4-6-1.

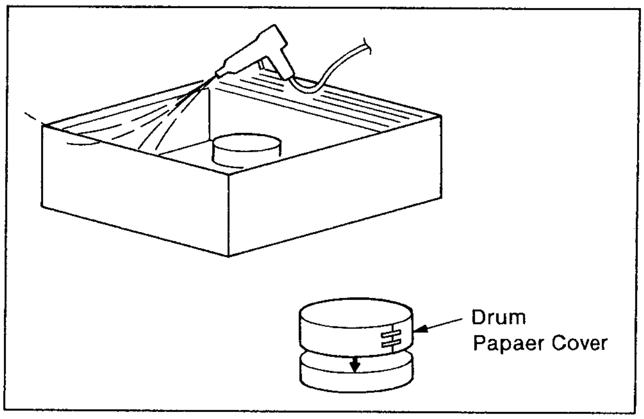


Fig. M4-6-1 Cleaning of Inside Machine

B. Electrical Section

Remove all panels and blow the dust from the gaps between the printed-circuit boards with the air-gun, Remove the bottom plate from the machine and blow the dust from around the mother board.

4-7. Lubricate the Gears and Sliding Surfaces (1 Year of Operation)

Check the gears and sliding surfaces as shown in Figure M4-7-1 and apply new grease if it is required. Apply a small amount of Molyton grease to the areas indicated on the drawing and spread it thinly with a sharpened stick. If dust or dirt is found mixed with the old grease during the initial check, wipe it off with a cloth before applying the new grease. After applying the grease, repeat the loading and unloading operation 2 or 3 times to spread the grease uniformly, and remove any excess grease.

Gears
- (a) Cam gear (gear area)
- (b) Worm gear (Loading Motor)
- (c) Worm gear (for Small Reel U/D Motor)

Sliding Surfaces
- (d) Cam gear (cam groove)
- (e)
- (f) Loading guide
- (g)

Note: It is easier to grease the worm gear (b), if the VIDEO 1 printed circuit board is removed.

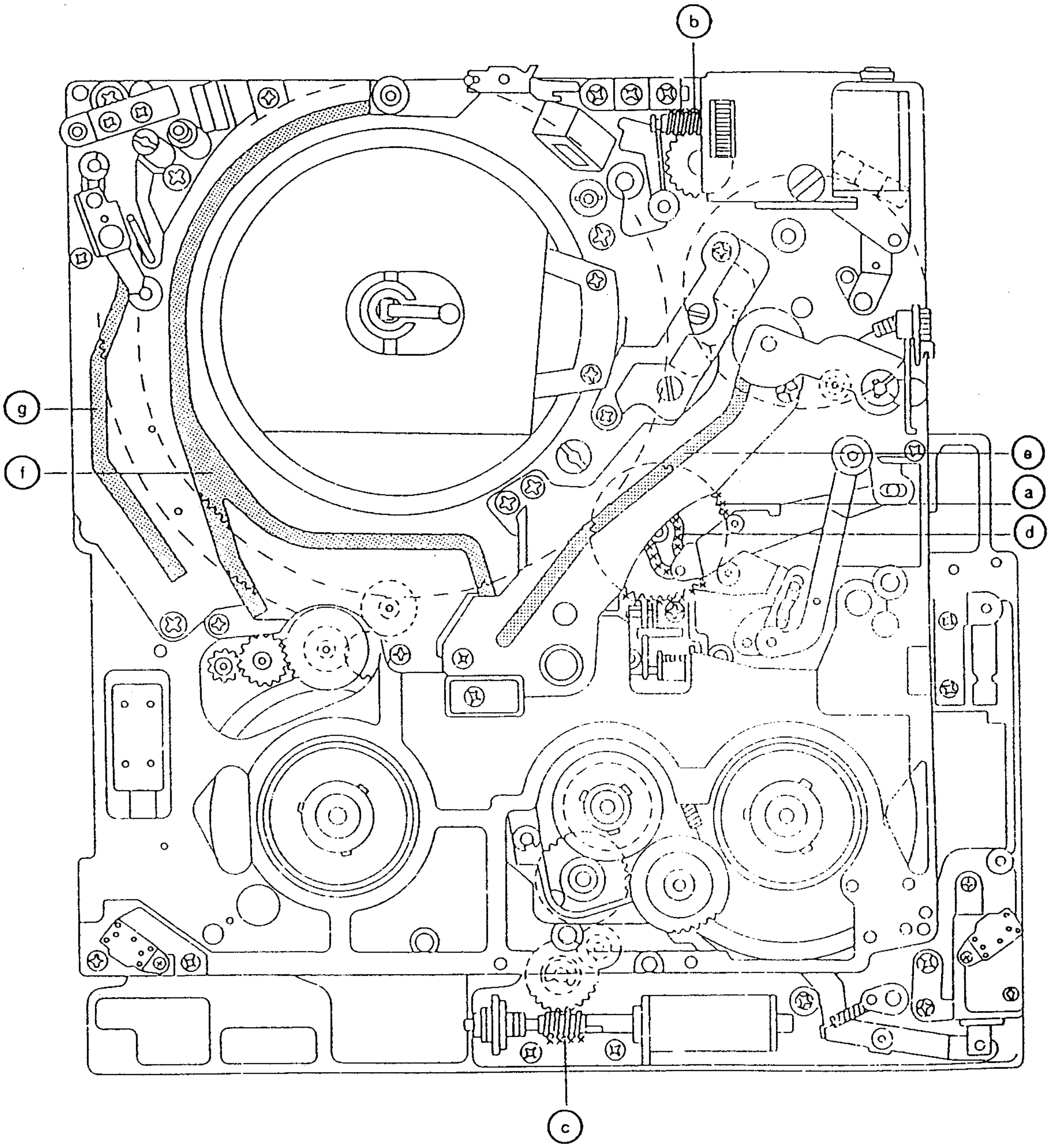


Fig. M4-7-1 Lubrication

5. Replacement and Adjustment of Mechanical Parts

5-1. Replacement and adjustment of Upper Drum

* Tools Required: Dial Gauge (VFK0325)
Head Adj. Plate (VFK0353A)

REPLACEMENT

1. Remove the top panel and bottom panel (See disassembly sec./paragraphs 1 and 2.)
2. Unscrew the 2 screws (A) so that the brush unit can be removed as shown in Figure P5-1-1.

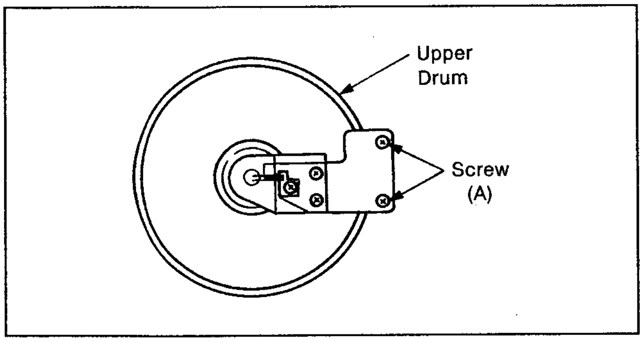


Fig. P5-1-1 Brush Unit Removal

3. Unsolder the 8 lead wires between the upper drum and lower drum as shown in Figure P5-1-2.
4. Unscrew the 2 screws (B) as shown in Figure P5-1-2 so that the upper drum can be removed.

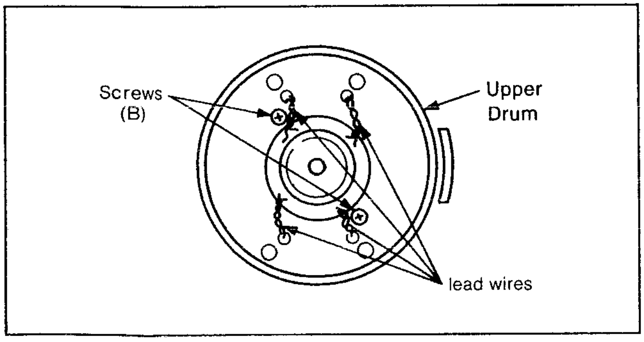


Fig. P5-1-2 Upper Drum Replacement

5. Install the new upper drum in the direction so that wire colors match, and tighten the 2 screws (B) tentatively as shown in Figure P5-1-2.
6. Install the dial gauge in place of the brush unit then tighten the 2 screws (A).
7. Fix the bolt (A) of the dial gauge so that the pick up of the dial gauge just touches to the upper drum.
8. Adjust the bolt (B) of the dial gauge so that the pressure value of the dial gauge indicates 20 ~ 80u.
9. Set the dial gauge Meter to 0 (Zero) and turn the upper drum slowly, while observing dial function (eccentricity) the specification value is less than 3u (3 scale indications).
10. If it is out of specification, adjust the position of the upper drum by tapping softly with a handle of driver at a point opposite of the measurement point. When the eccentricity is within ± 3μ, tighten the 2 screws (B) slightly then measure the value of the dial gauge again. If it is still out of specification, repeat this adjustment.
11. Tighten the 2 screws (B) securely and check eccetricity again. If it is within ± 3μ, remove the dial gauge.

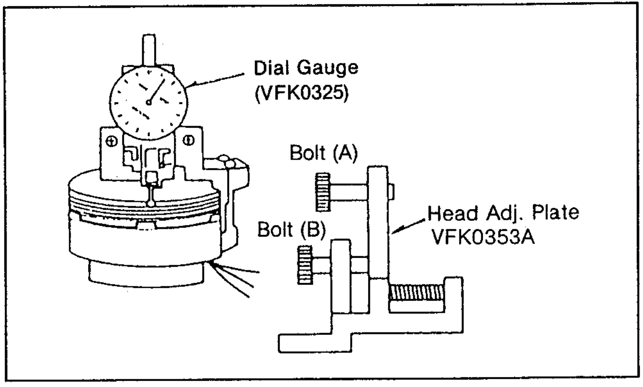


Fig. P5-1-3 Dial Gauge Setting

12. Solder the 8 lead wires of the upper drum.
Make sure that each wire's color matches as shown in Figure P5-1-4.

	Upper Side	Lower Side
1	Red	Red
2	Yellow	Black
3	White	White
4	Yellow	Black
5	Brown	Brown
6	Yellow	Black
7	Blue	Blue
8	Yellow	Black

Fig. P5-1-4 Connection of Lead Wires

13. Install the brush unit and tighten the 2 screws (A) as shown Figure P5-1-1.

ADJUSTMENT

After the replacement, perform the electrical adjustments as shown in Figure P5-1-5.

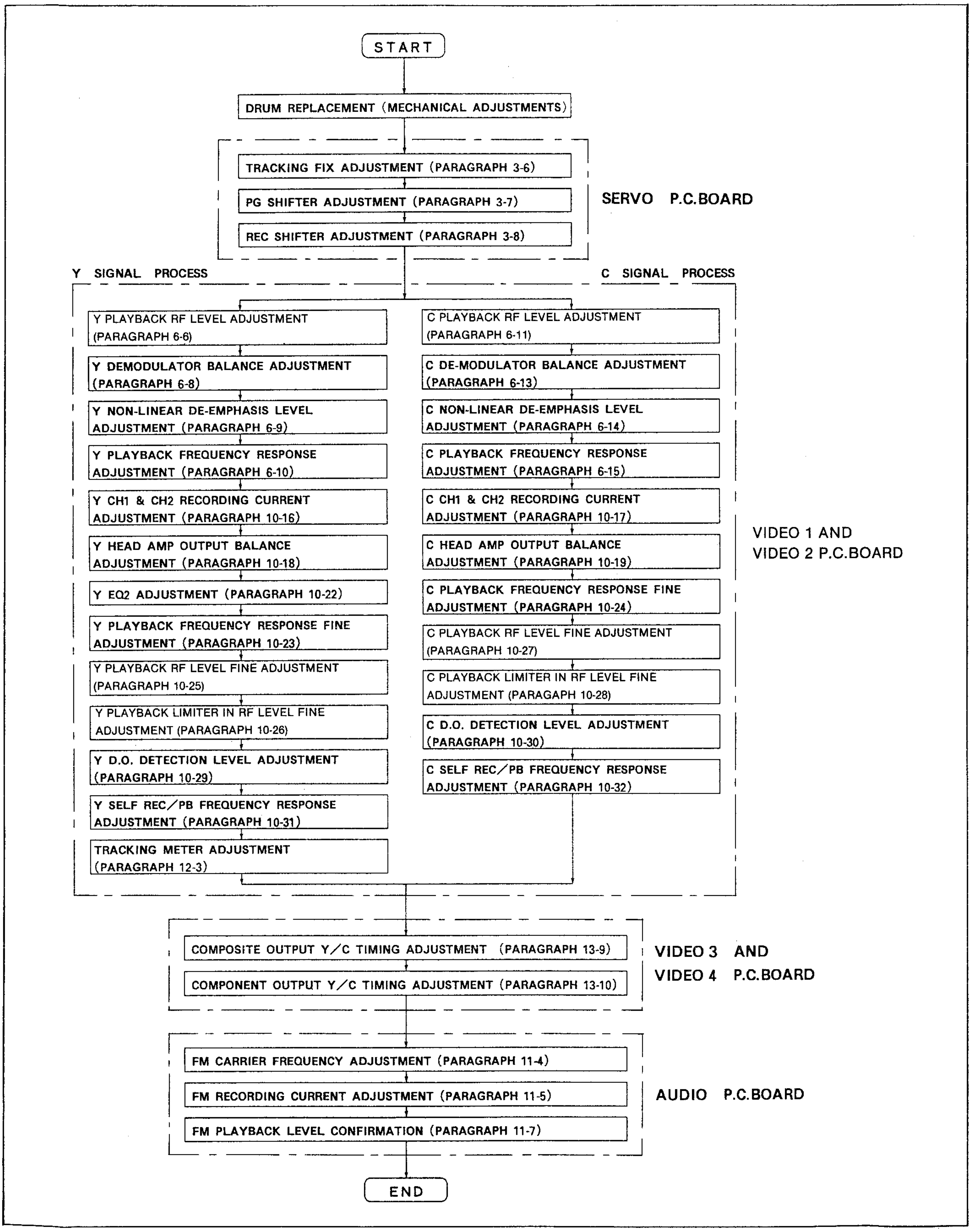

START
DRUM REPLACEMENT (MECHANICAL ADJUSTMENTS)
TRACKING FIX ADJUSTMENT (PARAGRAPH 3-6)
PG SHIFTER ADJUSTMENT (PARAGRAPH 3-7)
REC SHIFTER ADJUSTMENT (PARAGRAPH 3-8)
SERVO P.C.BOARD
Y SIGNAL PROCESS
C SIGNAL PROCESS
Y PLAYBACK RF LEVEL ADJUSTMENT (PARAGRAPH 6-6)
Y DEMODULATOR BALANCE ADJUSTMENT (PARAGRAPH 6-8)
Y NON-LINEAR DE-EMPHASIS LEVEL ADJUSTMENT (PARAGRAPH 6-9)
Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (PARAGRAPH 6-10)
Y CH1 & CH2 RECORDING CURRENT ADJUSTMENT (PARAGRAPH 10-16)
Y HEAD AMP OUTPUT BALANCE ADJUSTMENT (PARAGRAPH 10-18)
Y EQ2 ADJUSTMENT (PARAGRAPH 10-22)
Y PLAYBACK FREQUENCY RESPONSE FINE ADJUSTMENT (PARAGRAPH 10-23)
Y PLAYBACK RF LEVEL FINE ADJUSTMENT (PARAGRAPH 10-25)
Y PLAYBACK LIMITER IN RF LEVEL FINE ADJUSTMENT (PARAGRAPH 10-26)
Y D.O. DETECTION LEVEL ADJUSTMENT (PARAGRAPH 10-29)
Y SELF REC/PB FREQUENCY RESPONSE ADJUSTMENT (PARAGRAPH 10-31)
TRACKING METER ADJUSTMENT (PARAGRAPH 12-3)
C PLAYBACK RF LEVEL ADJUSTMENT (PARAGRAPH 6-11)
C DE-MODULATOR BALANCE ADJUSTMENT (PARAGRAPH 6-13)
C NON-LINEAR DE-EMPHASIS LEVEL ADJUSTMENT (PARAGRAPH 6-14)
C PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (PARAGRAPH 6-15)
C CH1 & CH2 RECORDING CURRENT ADJUSTMENT (PARAGRAPH 10-17)
C HEAD AMP OUTPUT BALANCE ADJUSTMENT (PARAGRAPH 10-19)
C PLAYBACK FREQUENCY RESPONSE FINE ADJUSTMENT (PARAGRAPH 10-24)
C PLAYBACK RF LEVEL FINE ADJUSTMENT (PARAGRAPH 10-27)
C PLAYBACK LIMITER IN RF LEVEL FINE ADJUSTMENT (PARAGAPH 10-28)
C D.O. DETECTION LEVEL ADJUSTMENT (PARAGRAPH 10-30)
C SELF REC/PB FREQUENCY RESPONSE ADJUSTMENT (PARAGRAPH 10-32)
VIDEO 1 AND
VIDEO 2 P.C.BOARD
COMPOSITE OUTPUT Y/C TIMING ADJUSTMENT (PARAGRAPH 13-9)
COMPONENT OUTPUT Y/C TIMING ADJUSTMENT (PARAGRAPH 13-10)
VIDEO 3 AND
VIDEO 4 P.C.BOARD
FM CARRIER FREQUENCY ADJUSTMENT (PARAGRAPH 11-4)
FM RECORDING CURRENT ADJUSTMENT (PARAGRAPH 11-5)
FM PLAYBACK LEVEL CONFIRMATION (PARAGRAPH 11-7)
AUDIO P.C.BOARD
END

Fig. P5-1-5 Electrical Adjustment Flowchart

5-2. Replacement and Adjustment of Drum Unit

REPLACEMENT

1. Remove the top, bottom and left side panels (See disassembly sec./paragraphs 1,2 and 3).
2. Unscrew the 2 screws (A) as shown in Figure P5-2-1 so that the brush unit can be removed.

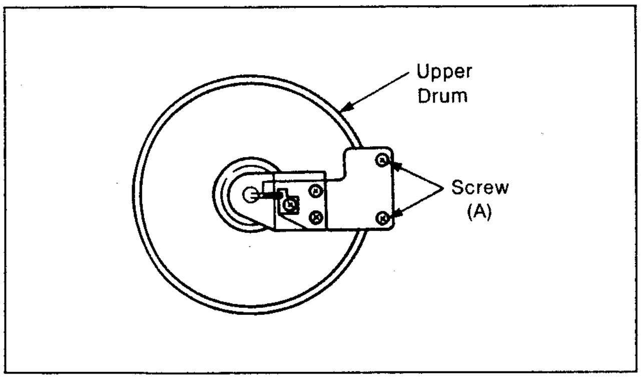

Upper Drum
Screw (A)

Fig. P5-2-1 Brush Unit Removal

3. Disconnect the connectors P3, P11 and P2 on the video mother P.C.Board, and P807 and P808 on the driver P.C.Board as shown in Figure P5-2-2.
4. Unscrew the 4 screws (B) as shown in Figure P5-2-2 so that the battery case cover can be lifted up.

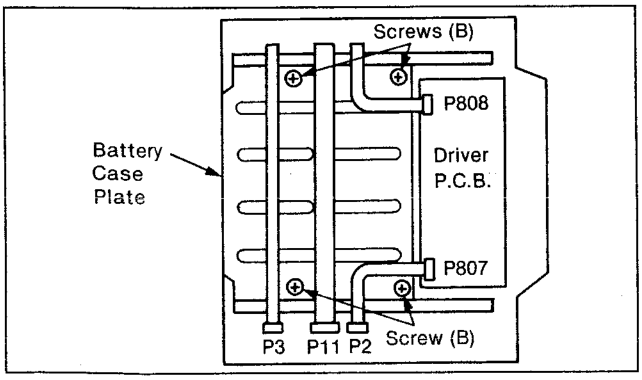

Screws (B)
P808
Battery Case Plate
Driver P.C.B.
P807
P3
P11
P2
Screw (B)

Fig. P5-2-2 Battery Pack Cover Removal

5. Unscrew the 3 screws (C) and lift up the battery terminal plate as shown in Figure P5-2-3.

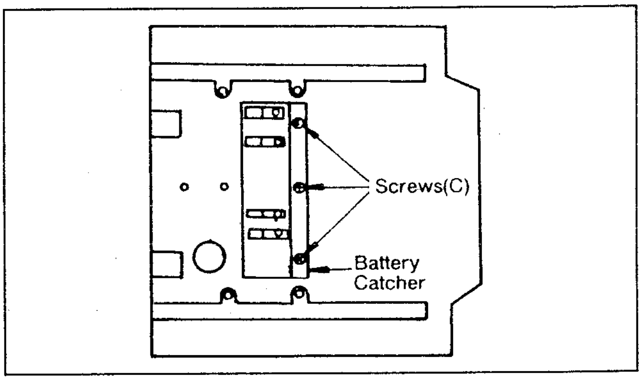

Screws(C)
Battery Catcher

Fig. P5-2-3 Battery Terminal Plate removal

6. Remove the video 1 P.C.Board and disconnect 2 connectors (P371 and P372) on the video 1 P.C.Board.

Note: Do not damage the head chip of upper drum, when the drum unit is replaced.

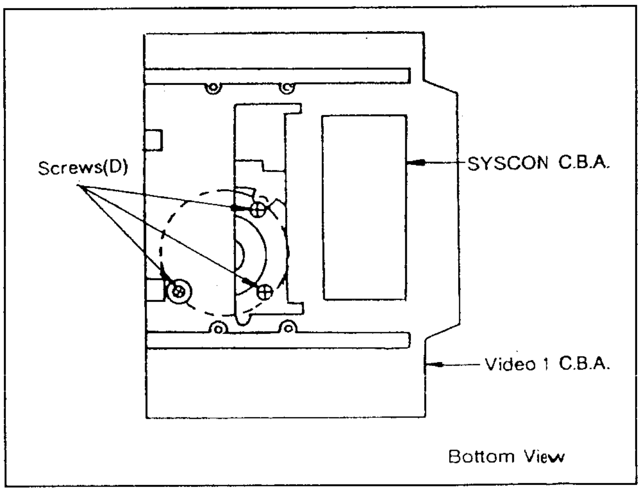

Screws(D)
SYSCON C.B.A.
Video 1 C.B.A.
Bottom View

Fig. P5-2-4 Drum Unit Removal

7. Unscrew the 3 screws (D) and lift up the drum unit slightly then the connector (P612) and flat cable can bee seen.

8. Disconnect the connector P612 as shown in Figure P5-2-5 so that the drum unit can be removed.
9. Unscrew the screw (E) and remove the dew sensor as shown in Figure P5-2-5.

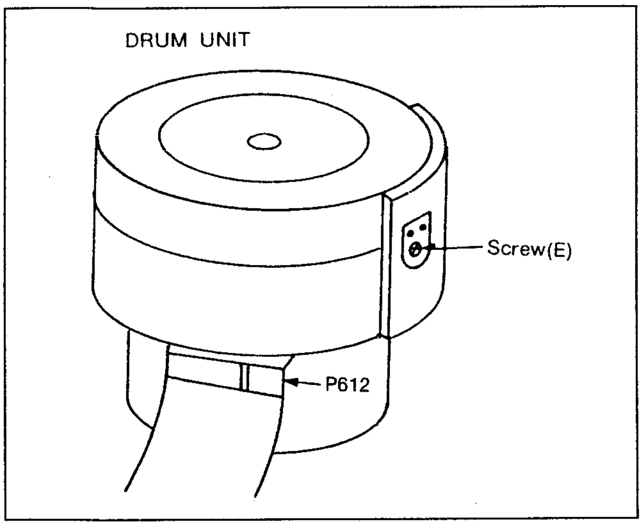
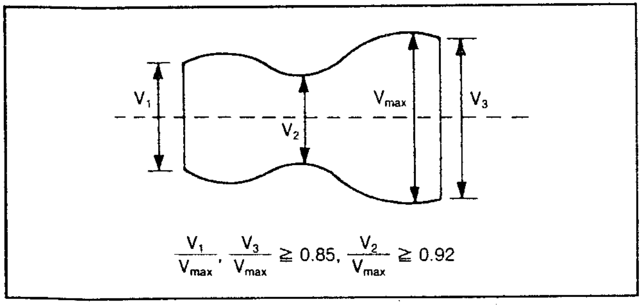


Fig. P5-2-5 Dew Sensor Removal

10. Install the new drum unit.
11. Reverse the previous steps.

ADJUSTMENT

After the replacement, confirm that the RF envelope (Y or C) becomes flat and within the specification as shown in Figure P5-2-6. If it is not within the specification, check the tape interchangeability adjustment.



$$\frac{V_1}{V_{max}}, \frac{V_3}{V_{max}} \geqq 0.85, \frac{V_2}{V_{max}} \geqq 0.92$$

Fig. P5-2-6 Envelope Output Confirmation

Then perform the electrical adjustments as shown in Figure P5-1-5.
(See electrical adjustment section).

5-3. Replacement of Loading Belt

1. Remove the top panel (See disassembly sec./Paragraph 1).
2. Unscrew the emergency eject lock screw (A) and open the emergency eject cover as shown in Figure P5-3-1.
3. Unlock the E ring (D) and remove the emergency eject wire (B) from the emergency eject (loading motor) unit as shown in Figure P5-3-1.
4. Unscrew the 3 screws (C) and remove the emergency eject unit.

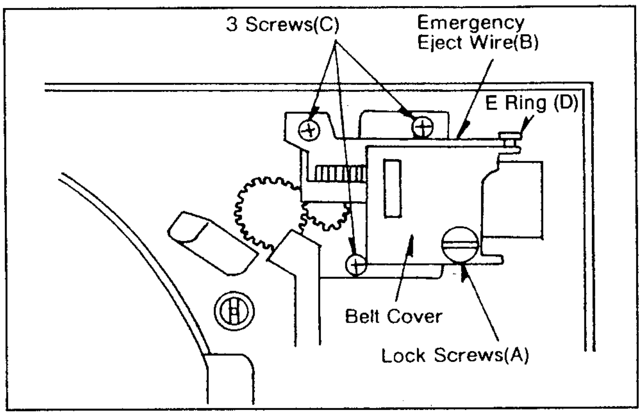


Fig. P5-3-1 Loading Motor Unit

5. Remove the loading belt between loading motor and worm gear as shown in Figure P5-3-2.

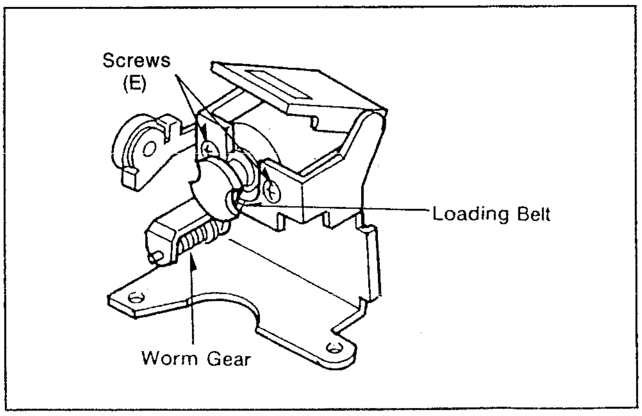


Fig. P5-3-2 Loading Belt

6. Install the new loading belt to the worm gear and attach the belt to the loading motor.
7. Reverse the previous steps.

5-4. Maintenance and Replacement of A/C Head Cleaner

MAINTENANCE

Note: The shape of the A/C head cleaner is hexagon as shown in Figure P5-4-1 so that the 3 sides of 6 sides can be used for the A/C head cleaning.

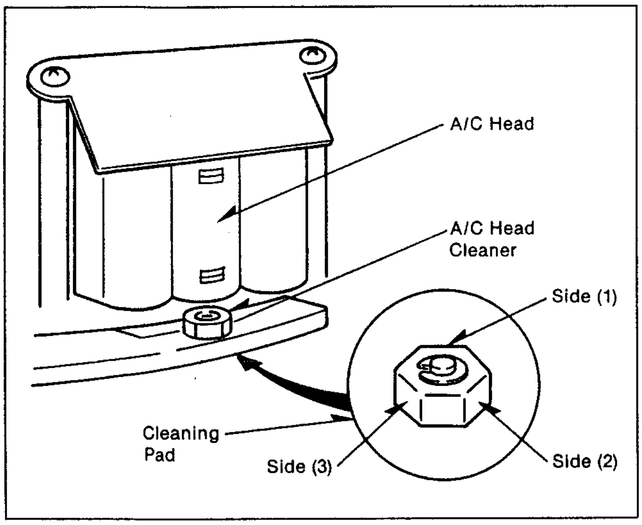

A/C Head
A/C Head Cleaner
Side (1)
Cleaning Pad
Side (3)
Side (2)

Fig. P5-4-1 Maintenance of A/C Head Cleaner

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Rotate the cleaning pad by 120° when the previous side of the cleaning pad becomes dirty.
3. Perform the loading and unloading by using the emergency eject function and make sure that the A/C head cleaning function is correct.
4. When the 3 sides (1), (2) and (3) have been dirty, replace the cleaning pad.

REPLACEMENT

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Carefully remove the A/C head cleaning pad by using a tweezers as shown in Figure P5-4-2.
3. Carefully and gently install the new cleaning pad by using tweezers.

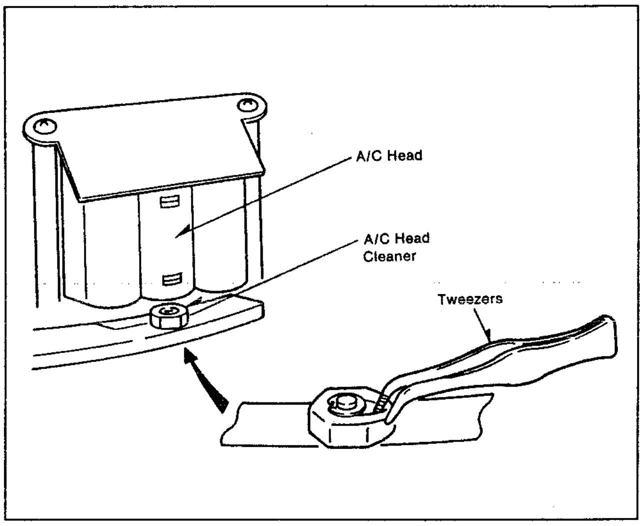

A/C Head
A/C Head Cleaner
Tweezers

Fig. P5-4-2 Replacement of A/C Head Cleaning Pad

4. After the replacement, perform the loading and unloading by using the emergency eject function and make sure that the A/C head cleaning function is correct.

5-5. Replacement and Adjustment of Tape Guide Posts Rollers

* Tools Required:
Post Driver (VFK0293)
Hex Wrench (VFK0410)
Alignment Tape (VFM7089EAG/NTSC)
(VFM7189EG/PAL)
Extender (VFK0859)

Figure 5-5-1 shows the location of tape guide posts.

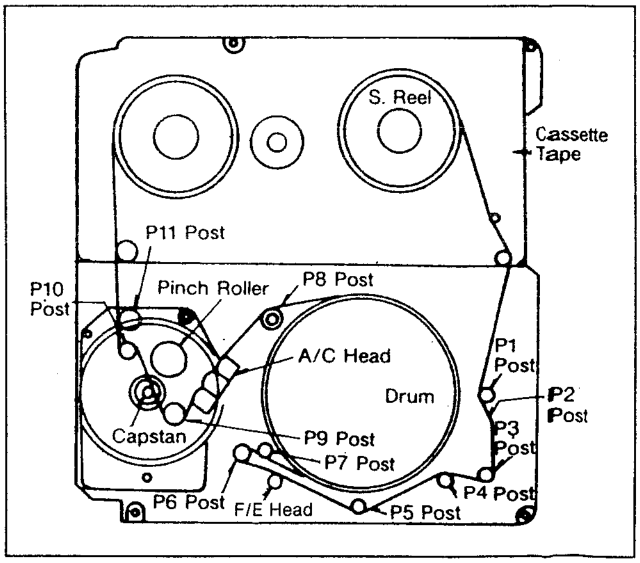

S. Reel
Cassette Tape
P11 Post
P10 Post
Pinch Roller
P8 Post
A/C Head
Drum
P1 Post
P2 Post
P3 Post
Capstan
P9 Post
P7 Post
P4 Post
P6 Post
F/E Head
P5 Post

Fig. P5-5-1 Location of Each Post

Important: When replacing the plural of the post rollers, do not replace the post rollers at the same time.
Each time replacing of every post roller, adjust and confirm the tape interchangeability, then replace next post roller.

A. Replacement of P3,P5,P6,P7,P8,P9 and P11 Posts

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Unscrew the upper flange and remove the separate parts on the post as shown in Figure P5-5-2.

Note: Be careful! Don't unscrew the hex screw in the flange when removing the roller post.

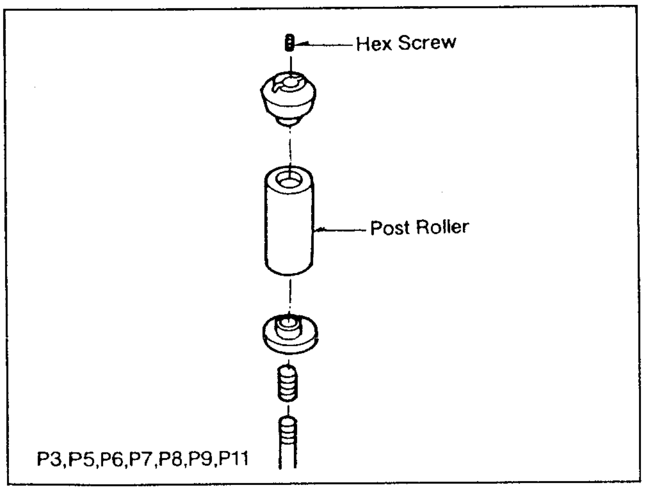


Fig. P5-5-2 Roller Post

3. Take off the post roller and install the new bearing as shown in Figure P5-5-2.
4. Install the new upper flange, (don't touch the hex screw.)
5. After replacement, tape interchangeability adjustment and cleaning are required.

Note: The replacement method of all posts is the same.

B. Replacement of P4 Roller Post

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Remove the washer (A) and remove the P4 arm unit as shown in Figure P5-5-3.

Note: Be careful! Don't lose the spring and washers when removing the P4 arm unit.

3. Remove the E-ring (B) and remove the P4 roller post as shown in Figure P5-5-3.

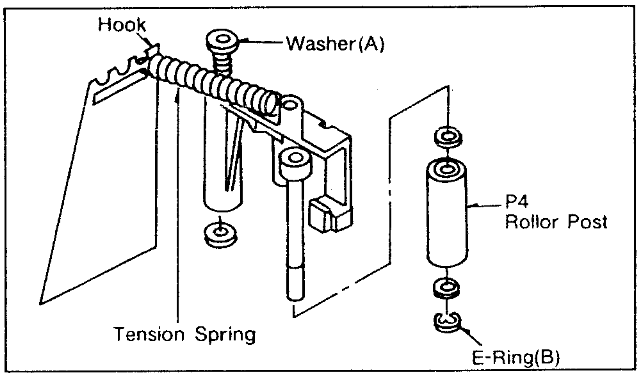


Fig. P5-5-3 P4 Roller Post

4. Install the new P4 roller post and attach the new washer.
5. Reverse the previous steps.
6. After the replacement, the tape interchangeability and tension confirmations as listed in Figure P5-5-4 are required.

	CONTENTS	SECTION	PARA-GRAPH
1	Tension off set Adjustment	Elec.-Adj.	3-1
2	Tension spring Pressure Confirmation	Elec.-Adj.	3-2
3	Supply Tension Adjustment	Elec.-Adj.	3-3
4	Take-up Tension Adjustment	Elec. Adj.	3-4
5	Tension Final Confirmation	Elec.-Adj.	3-5

Fig. P5-5-4 Tape Interchangeability Adjustment

C. Replacement of the P1 Arm Unit

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Remove the washer (A) and remove the P1 arm unit as shown in Figure P5-5-5.

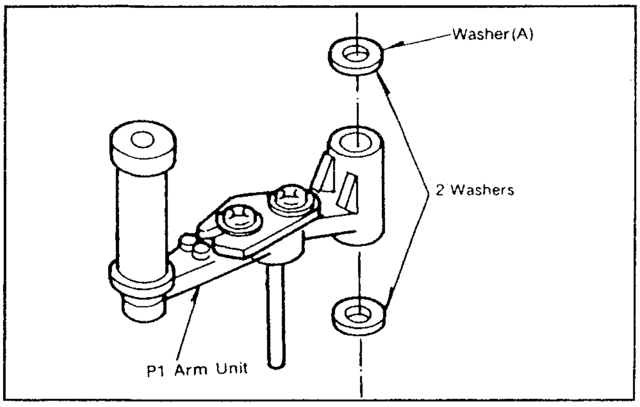


Fig. P5-5-5 P1 Arm Unit

Note: Be careful! Don't lose the 2 washers when removing the P1 Arm Unit as shown in Figure P5-5-5.

3. Install the new P1 arm unit and attach the new washer.
4. After the replacement, the tape interchangeability and tension confirmations as listed in Figure P5-5-4 are required.

D. Replacement of P10 Post

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Remove the washer (A) and remove the P10 roller post as shown in Figure P5-5-6.

Note: Be careful! Don't lose the washer (A) and (B) when removing the P10 roller post as shown in Figure P5-5-6.

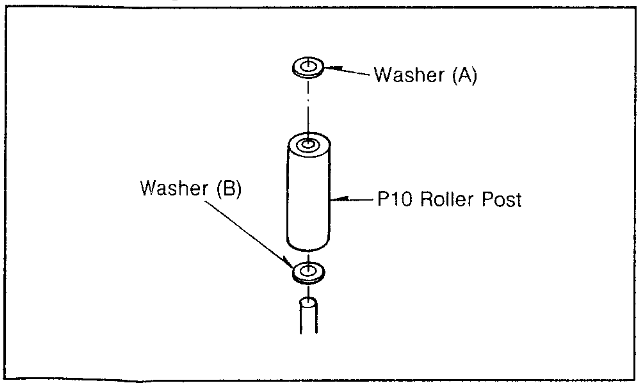


Fig. P5-5-6 P10 Roller Post

ADJUSTMENT

* Tools Required: Post Driver (VFK0293)
Hex Wrench (VFK0410)
Alignment Tape (VFM7089EAG)
(VFM7149EG)
Extender (VFK0859)

Adjustment General Instructions of Tape Interchangeability

Objectives of this adjustment are as follows:

1. Tape travels smoothly through the entire tape path and no tape damage should occur in any mode.
2. Good tape interchangeability can be obtained so that a recorded tape can be played back among units.

<First Step>

Play back a blank or pre-recorded tape and observe the tape path.
Pay attention to the flanges of all posts and make sure that tape curling or overriding over the flanges does not exit.
Use the mirror light for this purpose.

<Second Step>

Then use the reference tape and observe the RF envelope by using the oscilloscope.
If there is lack of envelope especially around the head switching positions, then adjustments are needed.

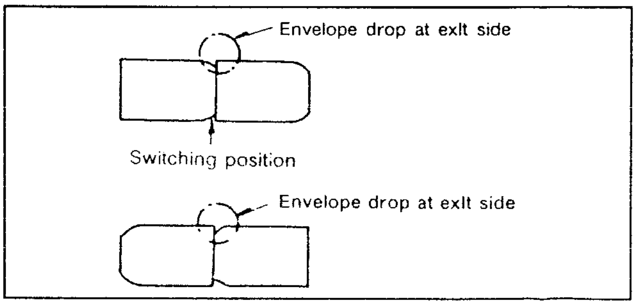


Fig. P5-5-7 Envelope Output

Examples:

Sequence of Adjustments:
Recommended sequence of adjustments is shown in the following chart.

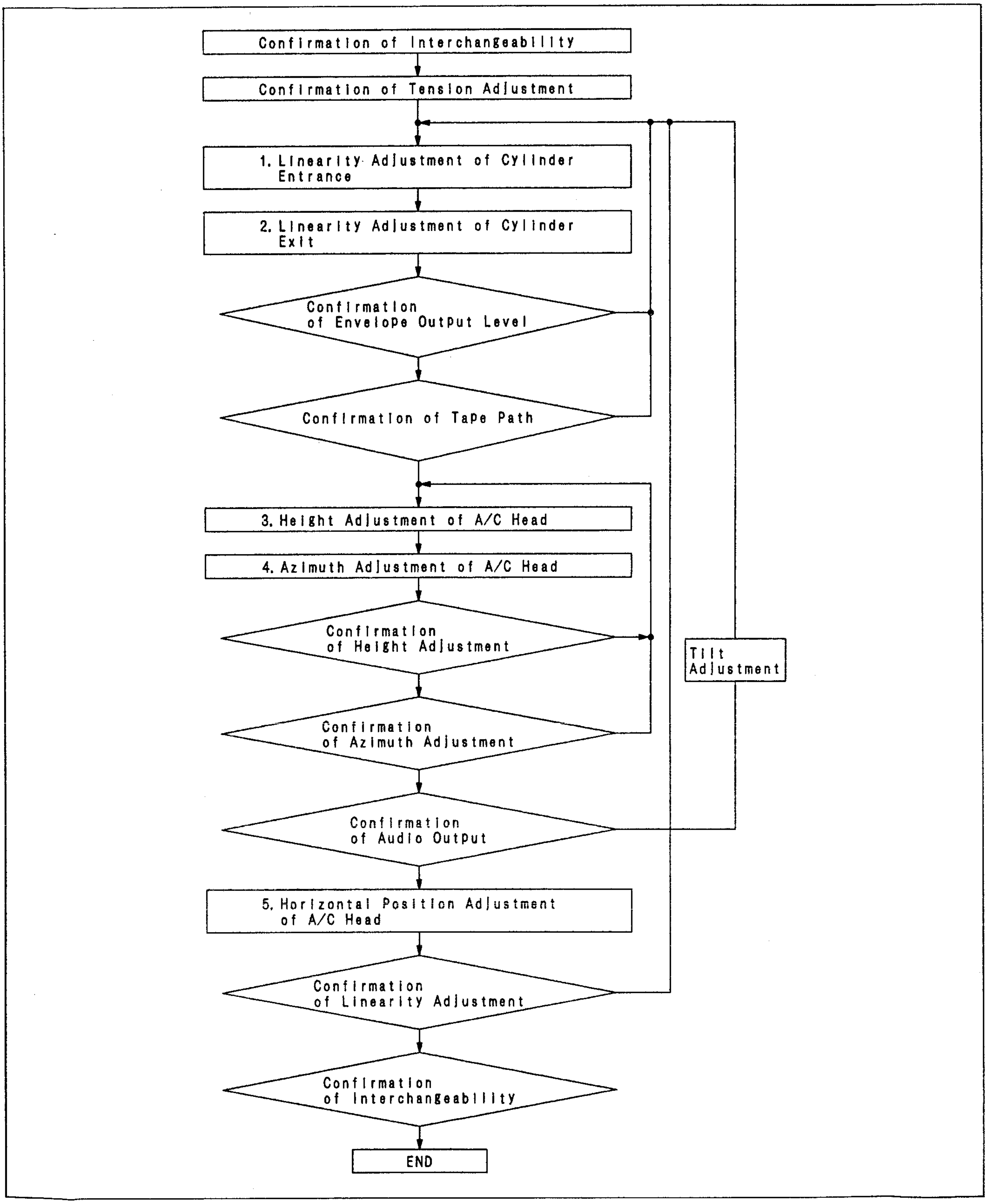

Confirmation of Interchangeability
Confirmation of Tension Adjustment
1. Linearity Adjustment of Cylinder Entrance
2. Linearity Adjustment of Cylinder Exit
Confirmation of Envelope Output Level
Confirmation of Tape Path
3. Height Adjustment of A/C Head
4. Azimuth Adjustment of A/C Head
Confirmation of Height Adjustment
Confirmation of Azimuth Adjustment
Tilt Adjustment
Confirmation of Audio Output
5. Horizontal Position Adjustment of A/C Head
Confirmation of Linearity Adjustment
Confirmation of Interchangeability
END

Fig. P5-5-8 Interchangeability Flow Chart

The locations of posts and summary of adjustments are shown in Figure P5-5-9 and P5-5-10.

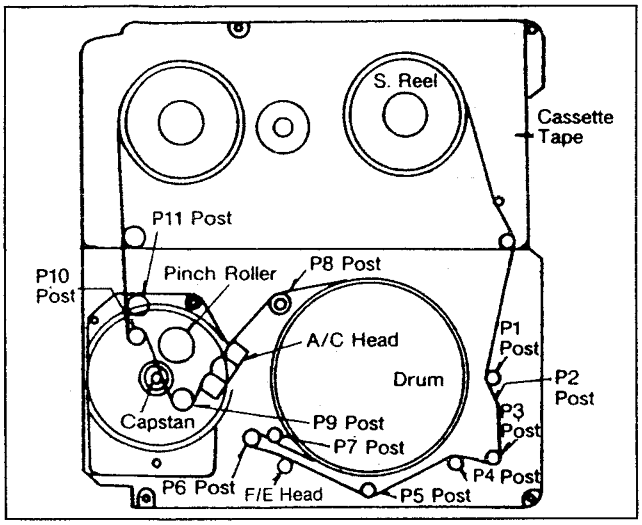

S. Reel
Cassette Tape
P11 Post
P10 Post
Pinch Roller
P8 Post
A/C Head
Drum
P1 Post
P2 Post
P3 Post
Capstan
P9 Post
P7 Post
P4 Post
P6 Post
F/E Head
P5 Post

Fig. P5-5-9 Location of Each Post

Name of Post	Height Adjustment	Tilt Adjustment	Tape Path Limit	Note
P1	—	—	Free	
P2	—	—	—	
P3	○*	—	Lower Limit	* Factory Set
P4	—	—	—	
P5	○	—	Lower Limit	
P6	○	○*	Upper Limit	* Factory Set
P7	○	—	Upper Limit	
P8	○	—	Upper Limit	
P9	○	○*	Lower Limit	* Factory Set
P10	—	—	—	
P11	○*	—	Lower Limit	* Factory Set

Fig. P5-5-10 Tape Path Limit Chart

A. P1 Post Position Confirmation/Adjustment

This is factory adjustment only, please do not adjust this post unless it is replaced.
In case this post is replaced, following confirmations and adjustments are needed.

1. Insert a work cassette and place the unit in the playback mode.
2. Observe both P2 and P1 ridge line (a-a) where tape contacts from the direction (C) (Apply light for easier observation).
   Make sure that both ridge lines of the posts are in the same inclination (angle). This makes smooth tape travel at the posts.
3. If it is not, slightly loosen the screw (A) and insert a flat screwdriver into the slot (B).
   Adjust the P1 position so that it meets above requirement.
4. After P1 post adjustment, observe both P2 and P3 ridge lines from the direction (D).
   Confirm that both ridge lines of the posts are in the same inclination (angle).

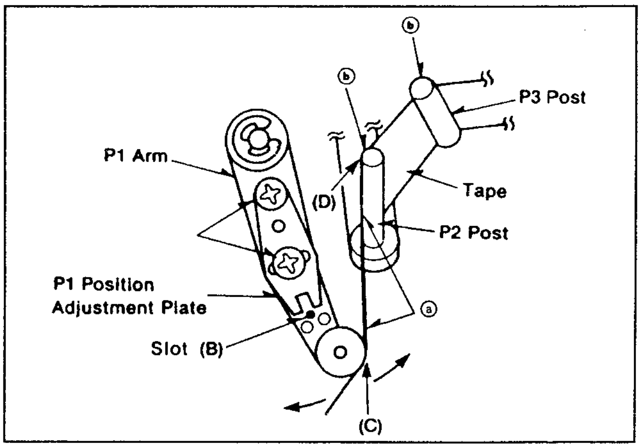

ⓑ
ⓑ
P3 Post
P1 Arm
(D)
Tape
P2 Post
P1 Position Adjustment Plate
ⓐ
Slot (B)
(C)

Fig. P5-5-11 P1 Post Position

B. Entrance Linearity Adjustment

1. Extend the video 1 P.C.Board by using the extender.
2. Connect the scope CH1 to TP21 on the video 1 P.C.Board and CH2 to TP19 (Trigger) on the video 1 P.C.Board.
3. Play back the tape linearity adjustment segment of alignment tape.
4. Adjust tracking control VR so that the envelope level is half (50%) of the maximum level.
5. Set both P6 and P7 limits as follows:

<P6 Post>

Put the post driver onto the P6 post and slightly loosen the hex screw first. Then turn the P6 post in clockwise so that the lower edge of the tape just touches the cylinder tape guide. Slightly tighten the hex screw confirming the envelope is as shown in Figure P5-5-12.

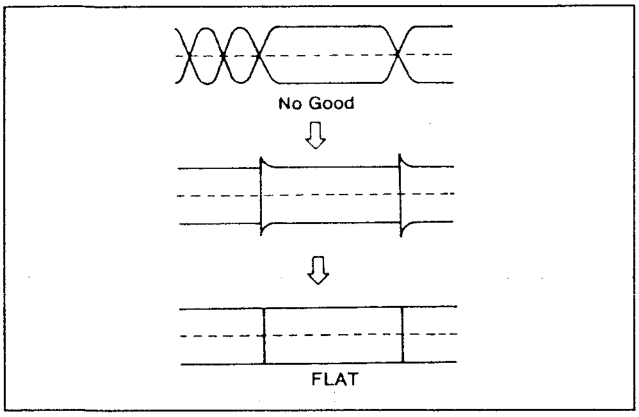


Fig. P5-5-12 Envelope Output of Entrance

<P7 Post>

Turn the P7 post in clockwise so that the upper flange of the P7 post just touches to the top edge of the tape. Confirm that envelope wave is flat as shown in Figure P5-5-12.
Tighten the hex screw.

C. Exit Linearity Adjustment

1. The setting of oscilloscope is the same as the entrance linearity adjustment.
   Play back the linearity adjustment segment of the alignment tape.
2. Set both P8 and P9 limits as follows:

<P8 Post>

Turn the P8 post in clockwise so that the upper flange of the P8 post just touches to the top edge of the tape.
Confirm the envelope is flat as shown in Figure P5-5-13.

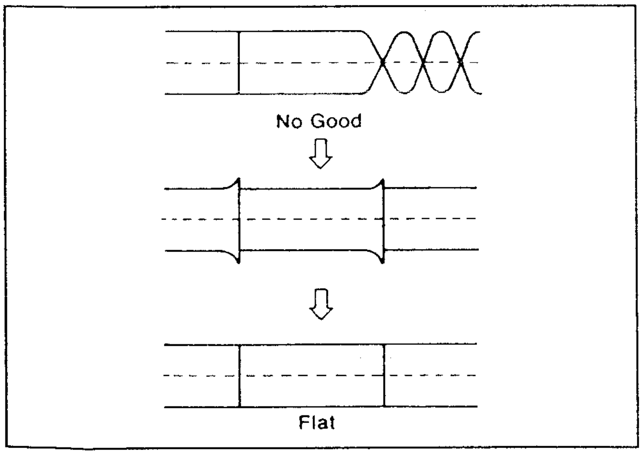


Fig. P5-5-13 Envelope Output Exit

Note: If the envelope is not flat after adjust the P8 post, turn the hex screw (A) on the A/C head shown in Fig. P5-8-6 clockwise so that the envelope becomes flat.

<P9 Post>

Confirm that the P9 post is set to lower. If it is not, turn the P9 post in counterclockwise so that the lower flange of the P9 post just touches to the bottom edge of the tape. After this adjustment, confirm that the envelope is flat as shown in Figure P5-5-13.

<Confirmation of P9 post inclination>

Place the unit in the playback mode and turn the P8 post in counterclockwise so that touches free of the tape, then turn the hex screw (B) in counterclockwise so that unit tape path becomes normal as shown in Figure P5-5-14.
Then adjust the P8 post so that the RF envelope becomes flat.

If the waveform (A) can not be obtained with P9 post, slightly tilt the A/C head to the tape side.
After the adjustment is completed, confirm that the tape damage or curling does not occur.
Turn the tracking VR to clockwise and counterclockwise and confirm that the RF level is always flat.

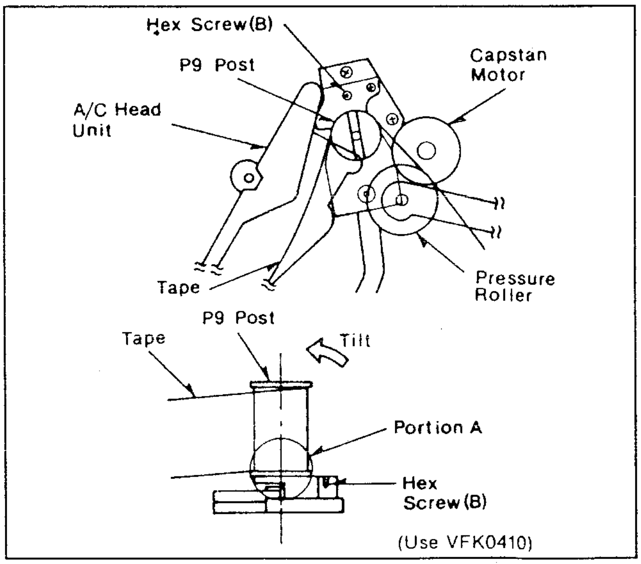


Fig. P5-5-14 P9 Post Inclination

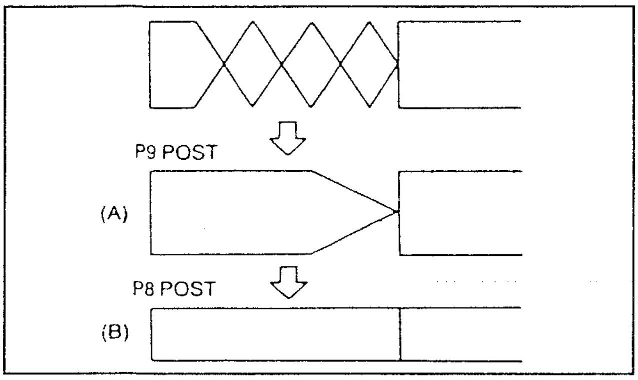


Fig. P5-5-15 Envelope Output Exit

Note: After this adjustment place the unit in the eject mode.
Then, place the unit in the playback mode again and reconfirm the tape path as described before.

D. Envelope Output Confirmation

1. After linearity adjustment, place the unit in the eject mode.
2. Connect the scope CH1 to TP20 (Y CH) and CH2 to TP21 (C CH) on the video 1 P.C.Board, and use TP19 on the same P.C.Board to trigger the scope. (The video 1 P.C.Board can be extended by using the extender VFK0859).
3. Insert the alignment tape and play back a sinewave (Linearity) portion.
4. Adjust the tracking control so that the envelope level is maximum.
5. Confirm the envelope output is as shown in Figure P5-5-16.

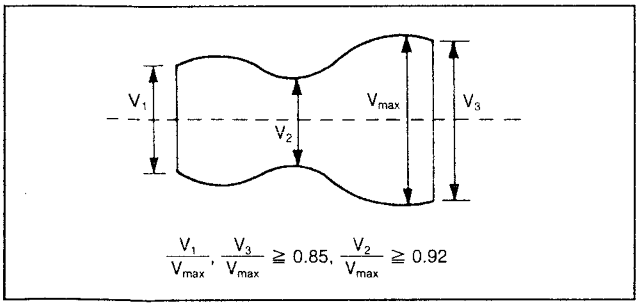


Fig. P5-5-16 Envelope Output Confirmation

5-6. Replacement of Pinch Roller Arm Unit

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Remove the E-ring (A) and disconnect the pinch roller arm lever from the pinch roller unit so that the pinch roller unit can be pulled out as shown in Figure P5-6-1.

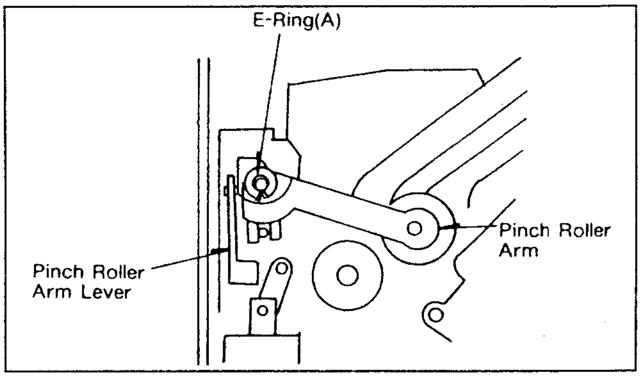


Fig. P5-6-1 Pinch Arm Removal

3. Install the new pinch roller unit.
4. Reverse the previous steps.

5-7. Replacement and Confirmation of Take-up and Supply Brake Units

REPLACEMENT

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Open the main chassis unit (See disassembly sec/paragraph 8).
3. Remove the E-ring (A) and brake spring (B) on the take-up brake unit as shown in Figure P5-7-1.

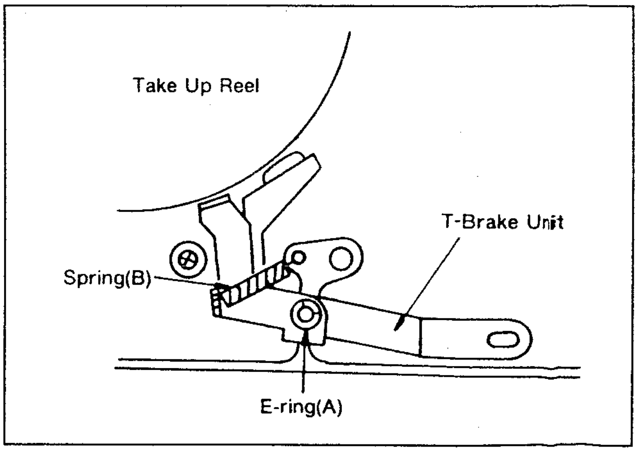


Fig. P5-7-1 T-Brake Unit Removal

4. Unscrew the 2 screws(C) on the take-up brake solenoid as shown in Figure P5-7-2 so that the solenoid can be lifted and disconnected from the take-up brake unit.

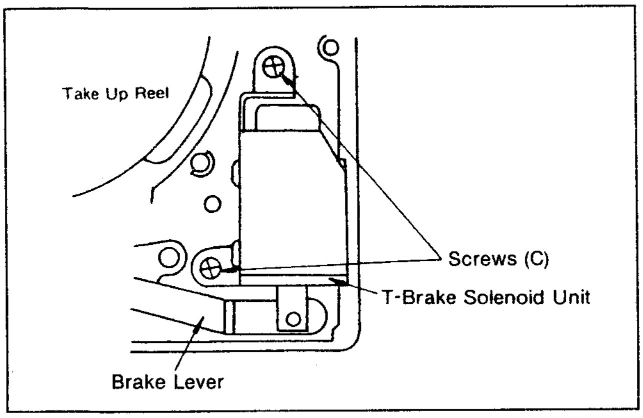

Take Up Reel
Screws (C)
T-Brake Solenoid Unit
Brake Lever

Fig. P5-7-2 T-Brake Solenoid Unit Removal

5. Remove the take-up brake unit.
6. Install the new take-up brake unit and reverse the previous steps.
7. Remove the sub chassis unit from the main chassis (See disassembly sec./paragraph 8).
8. Remove the E-ring (D) and brake spring (E) as shown in Figure P5-7-3.

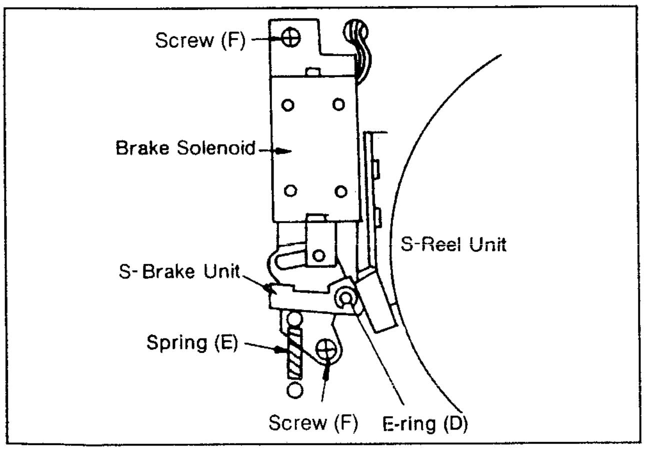

Screw (F)
Brake Solenoid
S-Reel Unit
S-Brake Unit
Spring (E)
Screw (F)
E-ring (D)

Fig. P5-7-3 S-Brake Unit

9. Unscrew the 2 screws (F) as shown in Figure P5-7-3 so that the supply brake unit can be removed.
10. Install the new supply brake unit and reverse the previous steps.

Note: After the replacement, confirm take-up and supply brakes torque.

CONFIRMATION

* Tools Required
Dial Torque Gauge (VFK0133)
Dial Torque Gauge Adaptor (VFK0134)

1. Attach the dial torque gauge adaptor to the dial torque gauge as shown in Figure P5-7-4.
2. Set the dial torque gauge with adaptor to the reel table as shown in Figure P5-7-4.

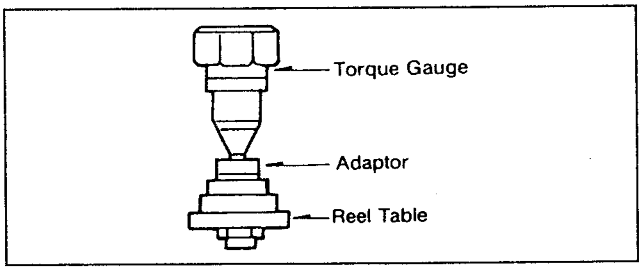
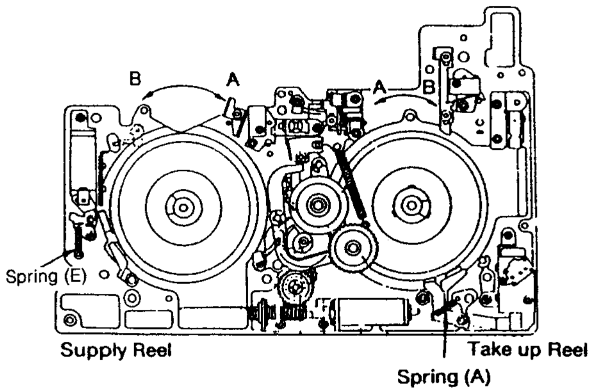

Torque Gauge
Adaptor
Reel Table

Fig. P5-7-4 Measuring Method

3. Lift the gauge (with adaptor) slightly from the reel table and turn the dial torque gauge in the direction as shown in Figure P5-7-5 and check that the value when brake slippage begins is within specification as shown in Figure P5-7-5.
   If it is not in the specification of take up side, change the spring (B) or take-up brake unit as shown in Figure P5-7-5.
   If it is not in the specification of supply side, change the spring (E) or supply brake unit as shown in Figure P5-7-5.



	A	B
Take-up	250~450g · cm	45~90g · cm
Supply		

Fig. P5-7-5 Brake Torque Specification

5-8. Replacement and Adjustment of A/C Head

REPLACEMENT

1. Remove the top cover (See disassembly sec./paragraph 1).
2. Unscrew the 2 screws (A) and remove the A/C head unit as shown in Figure P5-8-1.

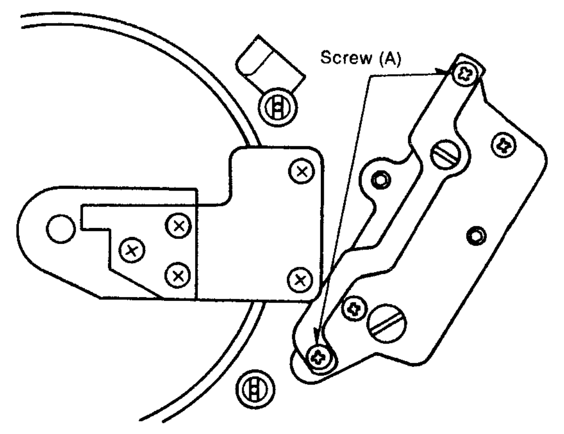


Fig. P5-8-1 A/C Head

3. Unscrew the 2 screws (B) and remove the shield cap as shown in Figure P5-8-2.
4. Unsolder the 10 wires on the A/C head unit as shown in Figure P5-8-3, and remove the A/C head.

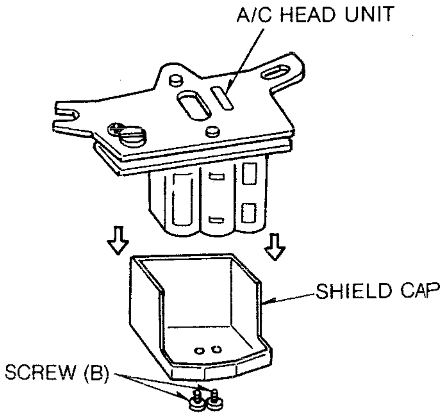


Fig. P5-8-2 Removal of Shield Cap

5. Solder the 10 lead wires to the new A/C head as follows.
6. Install the new A/C head and shield cap, reverse the previous steps.
7. After replacement is completed, the adjustments are required.

FROM (Conne.)	Color of Cable	Color of Tube
P212	Gray	Yellow
P212	Gray	Blue
P502	Blue	Brown
P209	Gray	Transparent
P209	Gray	Brown

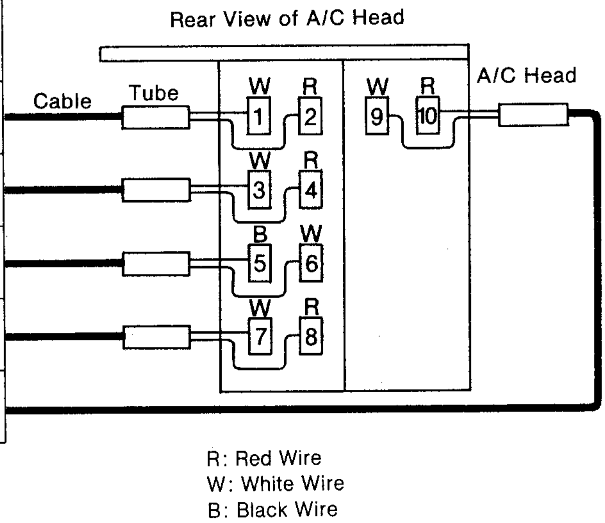

Rear View of A/C Head
A/C Head
Cable
Tube
W
R
1
2
W
R
9
10
W
R
3
4
B
W
5
6
W
R
7
8
R: Red Wire
W: White Wire
B: Black Wire

Fig. P5-8-3 A/C Head Connection

ADJUSTMENT

The electrical adjustments as listed in Figure P5-8-4 are required after the A/C head replacement.

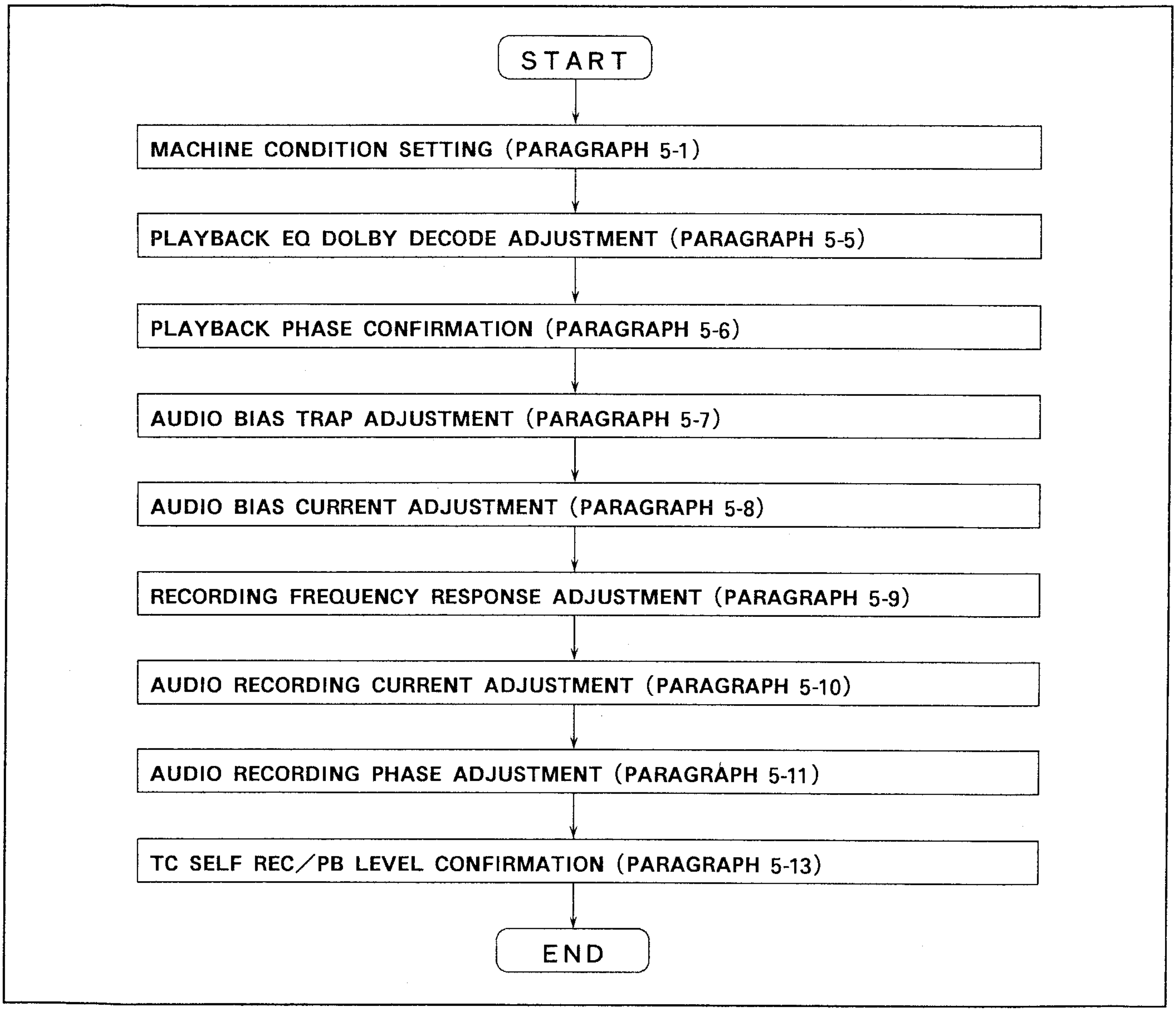

START
MACHINE CONDITION SETTING (PARAGRAPH 5-1)
PLAYBACK EQ DOLBY DECODE ADJUSTMENT (PARAGRAPH 5-5)
PLAYBACK PHASE CONFIRMATION (PARAGRAPH 5-6)
AUDIO BIAS TRAP ADJUSTMENT (PARAGRAPH 5-7)
AUDIO BIAS CURRENT ADJUSTMENT (PARAGRAPH 5-8)
RECORDING FREQUENCY RESPONSE ADJUSTMENT (PARAGRAPH 5-9)
AUDIO RECORDING CURRENT ADJUSTMENT (PARAGRAPH 5-10)
AUDIO RECORDING PHASE ADJUSTMENT (PARAGRAPH 5-11)
TC SELF REC/PB LEVEL CONFIRMATION (PARAGRAPH 5-13)
END

Fig. P5-8-4 A/C Head Adjustment Flowchart

Recommendation:

When the A/C head adjustment is performed, please observe the Y RF envelope (at TP20 on the video 1 P.C.Board) simultaneously.
Trigger the scope by TP19 on the video 1 P.C.B.

* Tools Required
Alignment Tape (VFM7089EAG/NTSC)
(VFM7189EG/PAL)
Hex Wrench (VFK0326)
Extender (VFK0859)

A. A/C Head Height Adjustment

1. Play back the alignment tape 3KHz Audio portion.
2. Connect the scope CH1 to TP101 (CH1 Audio) and CH2 to TP201 (CH2 Audio) on the audio P.C.Board.
3. Touch the tape on the A/C Head lightly and move the tape up and down by finger as shown in Figure P5-8-5.

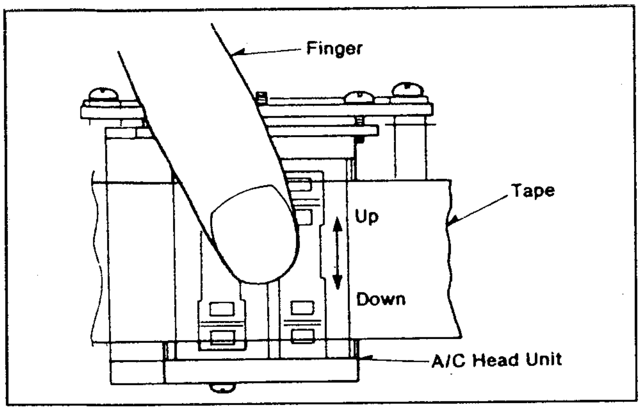


Fig. P5-8-5 A/C Head Height Confirmation

4. When the tape is moved to up or down, the audio level will be increased or decreased.
   In this case, adjust the A/C head height as shown in Figure P5-8-6.

Note: When adjust the A/C head height, turn the screws (A), (B), (C), and (D) in the same amount [screw (C) and (D) are in the reverse direction against screws (A) and (B)] so that the output level becomes maximum.

(a) = When the audio level is decreased at each tape movement, the A/C head height adjustment is good.

5. Then touch the tape on the A/C head lightly and move the tape up and down by finger and confirm that output level is maximum as shown in Figure P5-8-7.

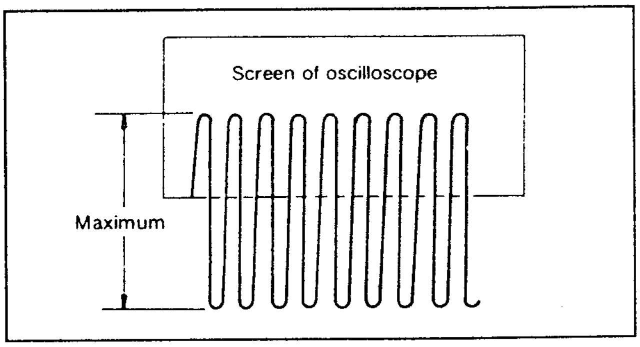


Fig. P5-8-7 Waveform Position

TAPE MOVEMENT	AUDIO LEVEL	A/C HEAD HEIGHT ADJUSTMENT	HEX SCREW		SCREW	
			A	B	C	D
DOUN ⇩	INCREASED ↗	UP ⇧	CCW	CCW	CW	CW
	DECREASED ↘	See the following item (a)	——		——	
UP ⇧	INCREASED ↗	DOWN ⇩	CW	CW	CCW	CCW
	DECREASED ↘	See the following item (a)	——		——	

CCW=Counter clockwise
CW =Clockwise

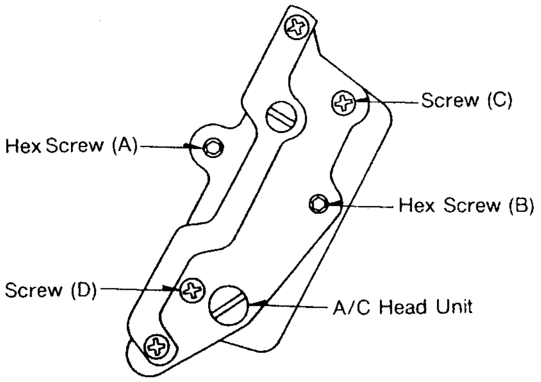


Fig. P5-8-6 A/C Head Height

6. If it is not maximum level, repeat its adjustment.

Note: After this adjustment, the azimuth adjustment and tilt adjustment of A/C head and RF envelope output confirmation (paragraph 5-5. D.) are required.

B. A/C Head Azimuth Adjustment

* Tool Required
Alignment Tape (VFM7089EAG/NTSC)
(VFM7189EG/PAL)

1. Extend the audio P.C.Board and connect the scope CH1 to TP101 (Audio CH1) and CH2 to TP201 (Audio CH2) on the AUDIO P.C.Board.
2. Insert the alignment tape and play back the audio 15KHz portion.
3. Confirm that the both waveforms are in same phase as shown in Figure P5-8-9.
4. If it is not, slightly loosen the screws (D) and adjust the screw (C) as shown in Figure P5-8-8 so that the both waveforms have the same phase and maximum amplitude at CH1 output.
5. Tighten the screw (D) and confirm that the waveforms have the same phase. If it is not same phase, repeat step 4.
6. Then touch the tape on the A/C head lightly (Refer to Figure P5-8-5) and move the tape up and down by finger and confirm that the output level is not more than maximum.
   If it is not, repeat the steps 3 to 6.

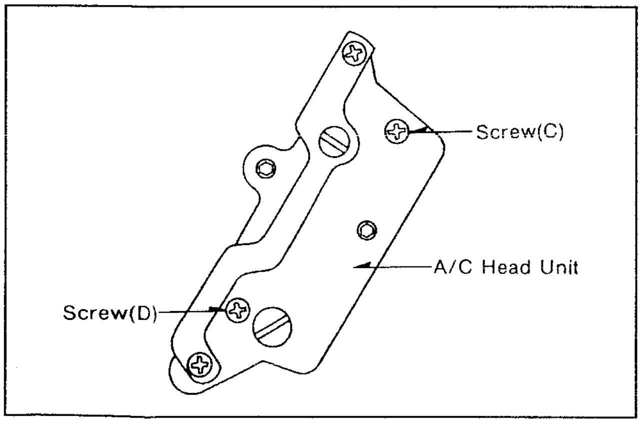


Fig. P5-8-8 Azimuth Adjustment

Note: After this adjustment, confirm the Height Adjustment of A/C Head, RF Envelope Output of video signal and specification of azimuth.

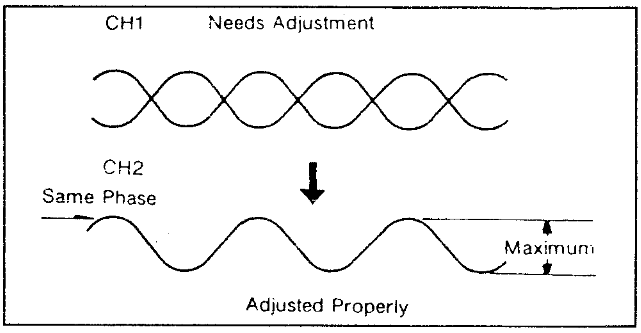


Fig. P5-8-9 Azimuth of A/C Head

C. Tilt Adjustment of A/C head

* Tools Required
Alignment Tape (VFM7089EAG/NTSC)
(VFM7189EG/PAL)

1. Extend the audio P.C.Board and connect the scope CH1 to TP101 (Audio CH1) and CH2 to TP201 (Audio CH2) on the AUDIO P.C.Board.
2. Insert the alignment tape and play back the audio 3KHz portion.
3. Then, touch the tape on the A/C head softly (Refer to Figure P5-8-5) and confirm that the audio level is not more than maximum.
4. If it is not, confirm the following items <1>, <2> and <3>.

<1> Touch the A/C head softly and move the tape up and down by finger pressure.
if the output level of audio increases more than maximum, readjust the height adjustment.

<2> When touching the A/C head as above, if the output level of audio increases more than maximum, adjust the tilt adjustment as shown below.
Turn the hex screw (A) counterclockwise or screw (B) clockwise as shown in Figure P5-8-10.

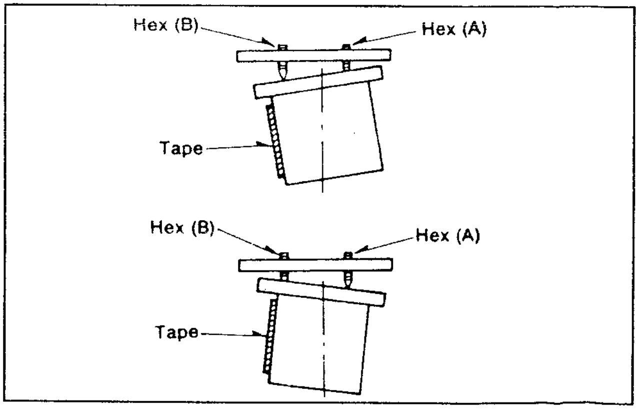


Fig. P5-8-10 A/C Head Tilt

<3> Insert the alignment tape and play back the tape.
Connect the scope to TP1 on the servo P.C.Board and confirm that the CTL pulse is more than 1.0Vp-p as shown in Figure P5-8-11.

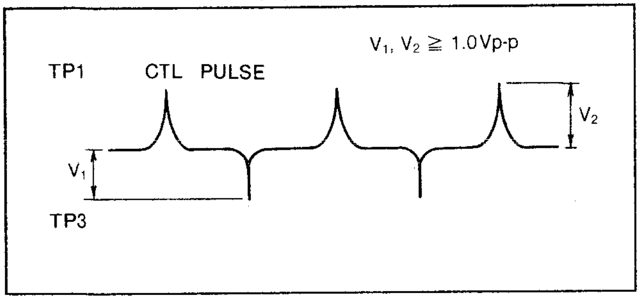


Fig. P5-8-11 Confirmation of CTL Pulse

If the CTL output is not proper pulse, perform the tilt adjustment of A/C head.

Note: After this adjustment, readjust from the linearity adjustment.
Basically, the surface of A/C Head should be vertical to the chassis.

D. Tracking Fix Adjustment

* Tools Required
Alignment Tape (VFM7089EAG/NTSC)
(VFM7189EG/PAL)
Extension Board (VFK0859)

1. Insert the alignment tape and play back the color bar portion.
2. Connect the scope to TP20 (video 1 P.C.Board) and use TP19 (video 1 P.C.Board) as the trigger.
3. Set the tracking control VR to its center and adjust VR1 (servo P.C.Board) so that the output of Y CH1 becomes maximum as shown in Figure P5-8-12.

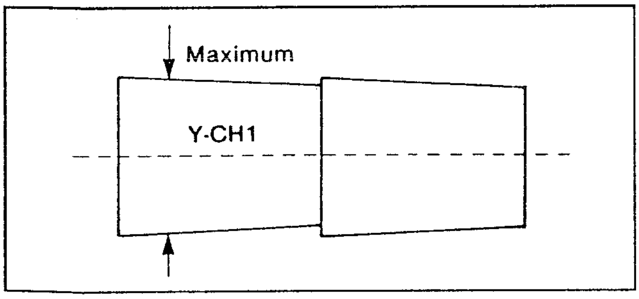


Fig. P5-8-12 Tracking Fix Adjustment

E. A/C Head Horizontal Position Adjustment

* Tools Required
Eccentric Screwdriver (VFK0357)
Alignment tape (VFM7089EAG/NTSC)
(VFM7189EG/PAL)
Extension Board (VFK0859)

Note: Before this adjustment, linearity adjustment, height, tilt and azimuth adjustment of A/C head and tracking fix adjustment on the servo P.C.Board should have been completed.

1. Insert the alignment tape and play back the field skip portion.
2. Connect the scope CH1 to TP20 (Y RF)(video 1 P.C.Board) and CH2 to TP201 (audio CH2) on the audio P.C.Board.
3. Slightly loosen the 2 screws (E) and insert the eccentric screwdriver into the hole (F) as shown in Figure P5-8-14.
4. Adjust the A/C head unit by turning the eccentric screwdriver so that the skip portion is in the same position as shown Figure P5-8-13.
5. Tighten the 2 screws (E).
6. After tighten the 2 screws (E), play back the linearity portion and reconfirm the RF envelope output is maximum by turning the tracking control VR.

Note: After this adjustment, confirm the A/C head height, tilt and azimuth.

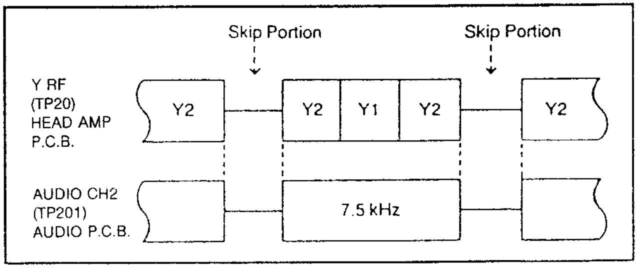


Fig. P5-8-13 RF Envelope Output

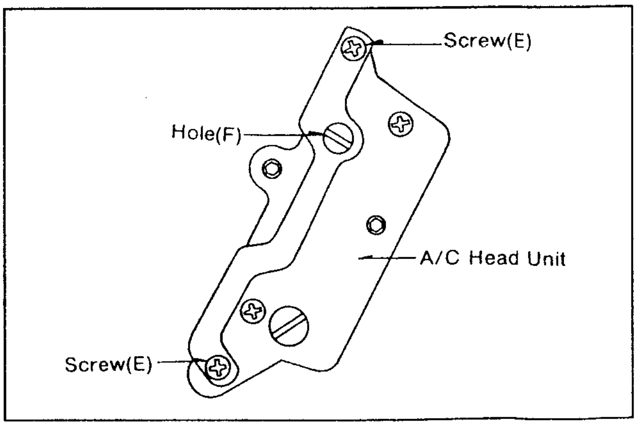


Fig. P5-8-14 Horizontal Position Adjustment

5-9. Replacement of Capstan Motor

1. Remove the main chassis (See disassembly sec./paragraph 8).
2. Unscrew the emergency eject screw and open the cover, then unscrew the 2 screws (D) and remove the P9 stopper unit as shown in Figure P5-9-1.

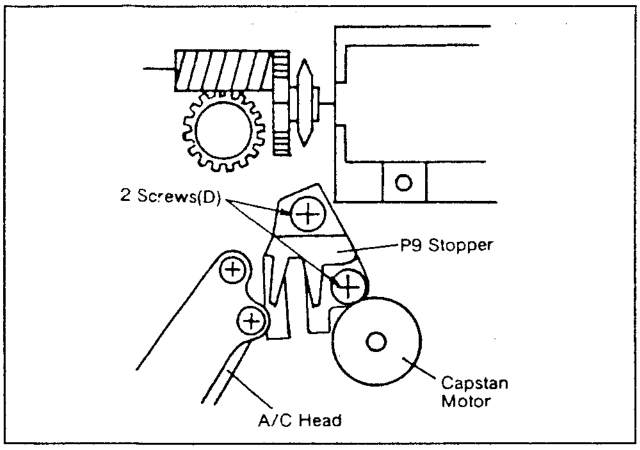

2 Screws(D)
P9 Stopper
Capstan Motor
A/C Head

Fig. P5-9-1 P9 Stopper Unit

3. Unscrew the 3 screws (A) and remove the capstan motor as shown in Figure P5-9-2.

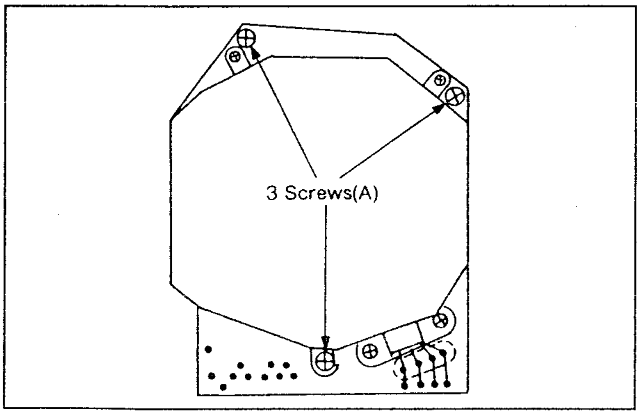


Fig. P5-9-2 Capstan Motor Removal

4. Install the new capstan motor unit and reverse the previous steps for reassembly.

5-10. Replacement of Full Erase Head

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Unsolder the 2 wires (A) on the FE head as shown in Figure P5-10-1.

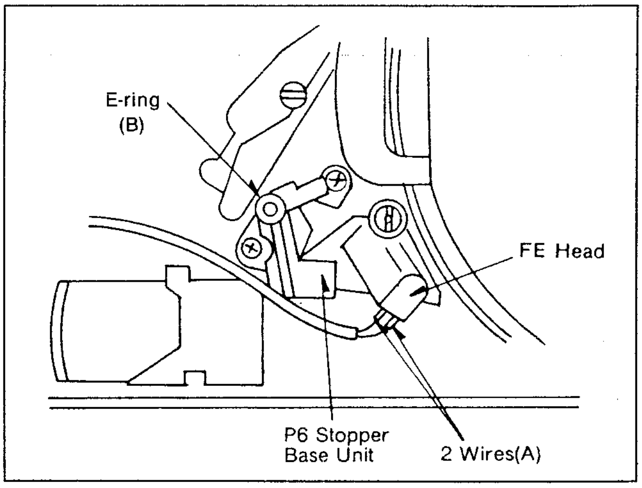

E-ring (B)
FE Head
P6 Stopper Base Unit
2 Wires(A)

Fig. P5-10-1 P6 Stopper Base Unit

3. Remove the E-ring (B).
4. Unscrew the screw (C) on the back side of the FE head base and remove the FE head as shown in Figure P5-10-2.

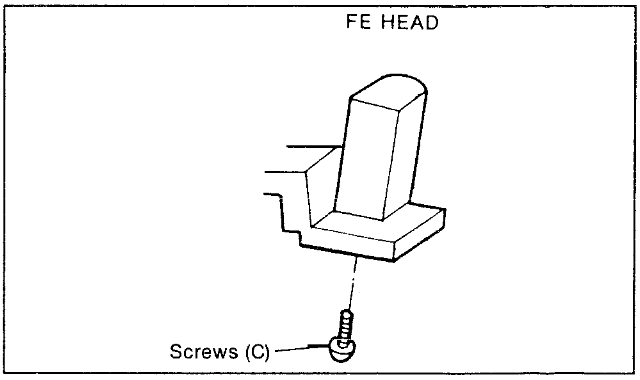

FE HEAD
Screws (C)

Fig. P5-10-2 Full Erase Head

5. Install the new FE head to the FE head base and install it in the original position.
6. Solder the 2 wires to the FE head.

5-11. Replacement of Loading Motor with Pulley

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Unscrew the emergency eject lock screw (A) and open the emergency eject cover as shown in Figure P5-11-1.
3. Remove the E ring (D) and remove the emergency eject wire (B) from the emergency eject (loading motor) unit as shown in Figure P5-11-1.
4. Unscrew 3 screws (C) and remove the emergency eject unit.

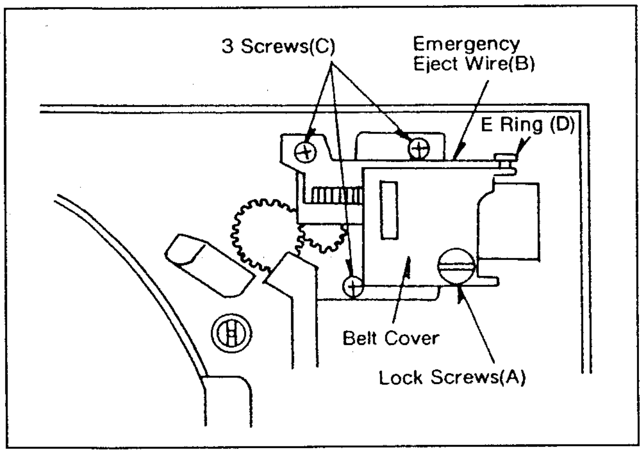

3 Screws(C)
Emergency Eject Wire(B)
E Ring (D)
Belt Cover
Lock Screws(A)

Fig. P5-11-1 Loading Motor Unit

5. Remove the loading belt between loading motor and worm gear as shown in Figure 5-11-2.

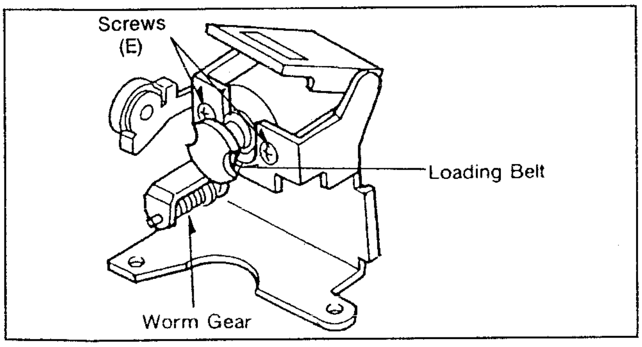

Screws (E)
Loading Belt
Worm Gear

Fig. P5-11-2 Loading Belt

6. Unsolder the 2 wires on the loading motor.
7. Unscrew the 2 screws (E) on the motor base as shown in Figure P5-11-2 and remove the loading motor as shown in Figure P5-11-2.
8. Install the new loading motor.
9. Solder the 2 wires and reverse the previous steps.

5-12. Replacement of Tension Plate Spring

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Remove the washer (A). Be careful! There is a spring under the washer (A).
3. Remove the spring (C) so that the P4 arm unit can be removed as shown in Figure P5-12-1.
4. Remove the screw (B) as shown in Figure 5-12-1 and remove the tension plate spring.

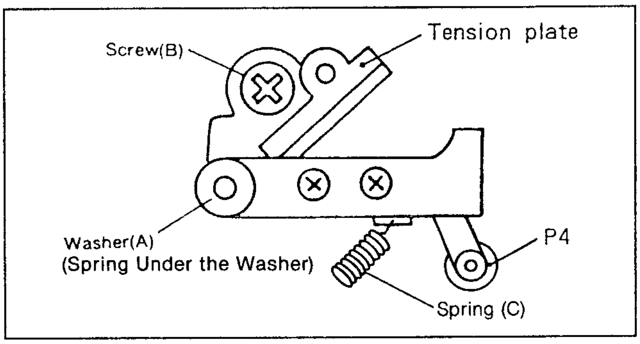

Screw(B)
Tension plate
Washer(A)
(Spring Under the Washer)
P4
Spring (C)

Fig. P5-12-1 Tension Plate Spring

5. Install the new tension plate spring.
6. Reverse the previous steps.
7. After install the tension plate spring, perform the tension adjustments (See electrical adj. sec./paragraphs 3-1,3-2,3-3,3-4 and 3-5).

5-13. Replacement of Small reel Up/Down Motor

1. Remove the cassette compartment (See disassembly sec./paragraph 7).
2. Unsolder the 2 lead wires (A) as shown in Figure P5-13-1.
3. Unscrew the 2 screws (B) and remove the up/down motor unit as shown in Figure P5-13-1.

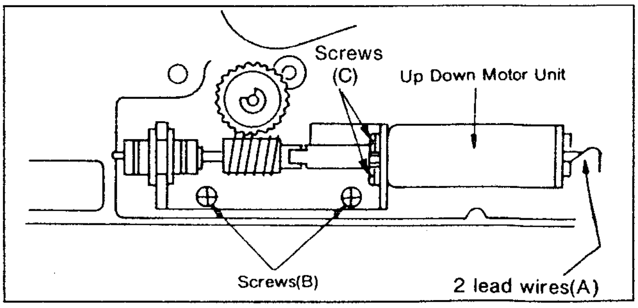

Screws (C)
Up Down Motor Unit
Screws(B)
2 lead wires(A)

Fig. P5-13-1 Up/Down Motor Unit Removal

4. Unscrew the 2 screws (C) as shown in Figure P5-13-1 and remove the up/down motor.
5. Install the new up/down motor and reverse the previous steps.

5-14. Replacement, Adjustment and Confirmation of Pinch Roller Solenoid

REPLACEMENT

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Unscrew the 3 screws (C) as shown Figure P5-14-1 so that the emergency eject unit (loading motor) can be moved.

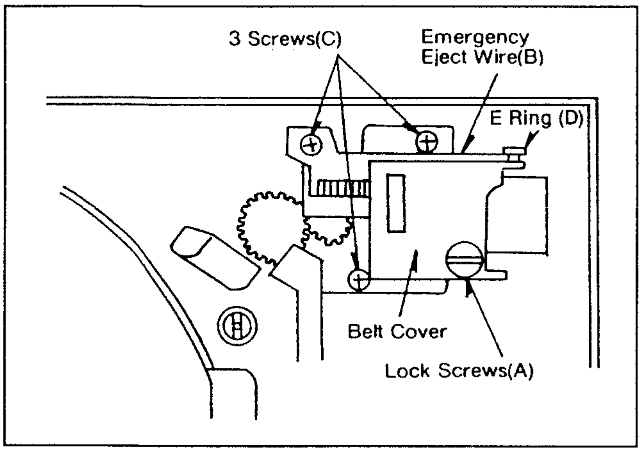


Fig. P5-14-1 Loading Motor Unit

3. Remove the E-ring (D) as shown in Figure P5-14-2.
4. Unscrew the 2 screws (E) and remove the pinch solenoid base unit as shown in Figure P5-14-2.

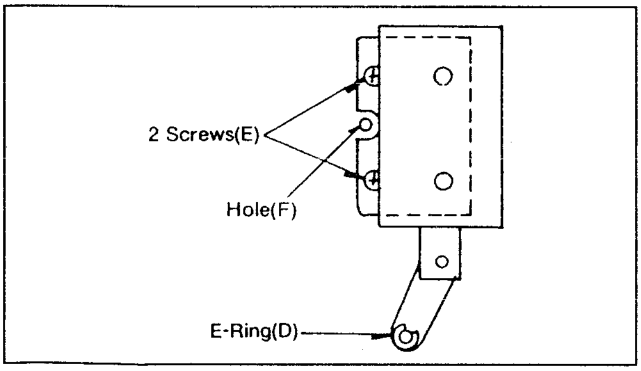


Fig. P5-14-2 Pinch Roller Solenoid

5. Unscrew 2 screws (H) so that the connection P.C.Board can be removed as shown in Figure P5-14-3.
6. Unsolder the 3 wires (G) on the connection P.C.Board.

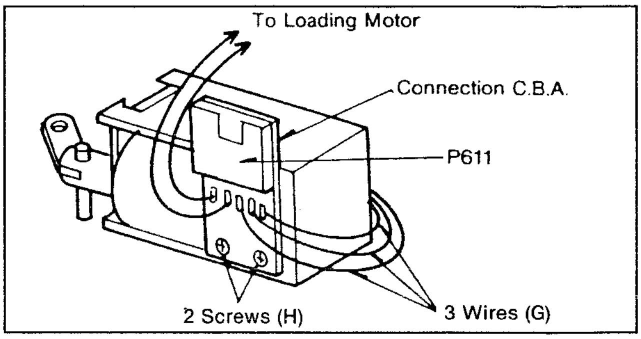


Fig. P5-14-3 Pinch Solenoid

7. Install the new pinch roller solenoid and reverse the previous steps.
8. After replacement, adjust the pinch solenoid position.

ADJUSTMENT

* Tools Required:
Pinch Position ADJ. TOOL (VFK0599A)
Pinch Position (1) Plate (VFK0691)
Pinch Position (2) Pin (VFK0692)

1. Place the unit in the loading completion mode.
2. Remove the 3 screws (C) as shown in Figure P5-14-1 so that the emergency eject unit (loading motor) can be moved.
3. Remove 2 screws (H) and connection P.C.Board on the Pinch Roller solenoid as shown in Figure P5-14-3.
4. Slightly loosen 2 screws (E) as shown in Figure P5-14-2.
5. Install the pinch position (1) plate (VFK0691) on the pinch solenoid and fix the plate (VFK0691) by the pinch position (2) pin (VFK0692) as shown in Figure P5-14-4.
   Then tighten 2 screws (C) while pushing pinch position (1) plate (VFK0691) to pinch roller side by finger.
   Be sure that the solenoid is pulling fully while this step.

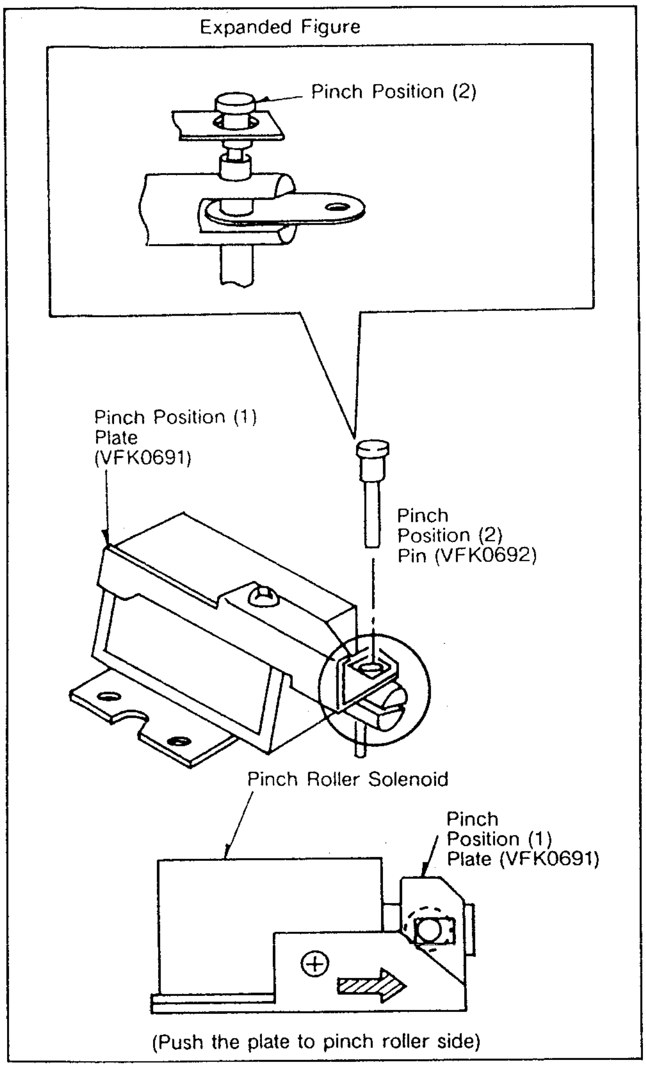

Expanded Figure
Pinch Position (2)
Pinch Position (1)
Plate
(VFK0691)
Pinch
Position (2)
Pin (VFK0692)
Pinch Roller Solenoid
Pinch
Position (1)
Plate (VFK0691)
(Push the plate to pinch roller side)

Fig. P5-14-4 Pinch Roller Solenoid (3)

6. Move the solenoid by eccentric driver until the pinch roller just touches to capstan shaft (It makes pinch roller "on" condition) and instantaneously tighten 2 screws (E).
7. Confirm that the capstan motor is easily turned by rotation of the pinch roller using finger. However, if it is not performed, repeat the steps from 4 to 7.
8. After confirmation, reinstall the loading motor unit in the reverse order.
9. Place the unit in the loading completion mode.
10. Remove the E-ring (A) on the pinch arm unit as shown in Figure P5-14-5.

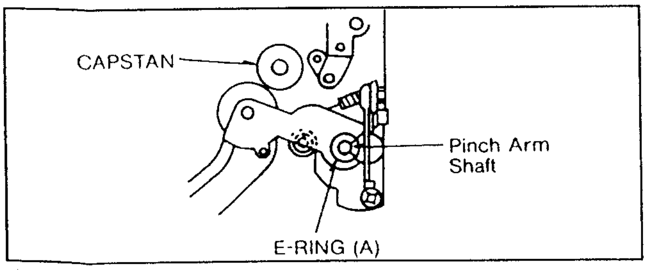

CAPSTAN
Pinch Arm
Shaft
E-RING (A)

Fig. P5-14-5 Pinch Arm Unit

11. Insert the pinch position adj. tool to the pinch arm shaft and confirm that the pinch position adj. tool touches pin (H).
12. Press the solenoid core by finger to make the pinch roller in "ON" condition (Pinch roller must touch capstan shaft).

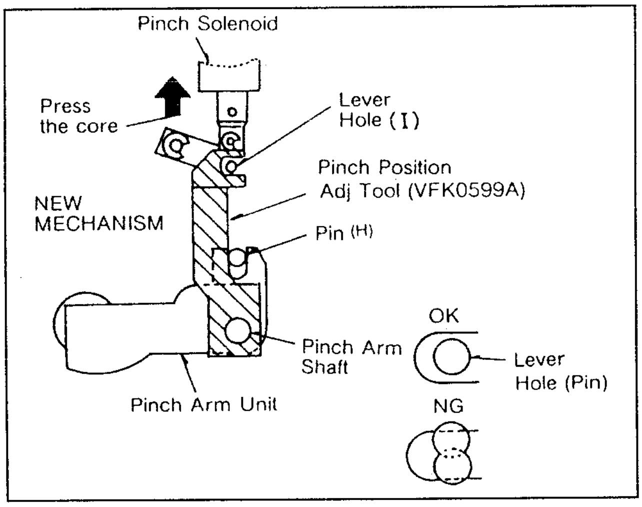

Pinch Solenoid
Press
the core
Lever
Hole (I)
Pinch Position
Adj Tool (VFK0599A)
NEW
MECHANISM
Pin (H)
OK
Pinch Arm
Shaft
Lever
Hole (Pin)
Pinch Arm Unit
NG

Fig. P5-14-6 Pinch solenoid Position

13. Confirm that the lever hole (I) is placed at the centre of U shape of pinch position adj. tool as shown in Figure P5-14-6.
14. If it is not, repeat the adjustment from its beginning again.

CONFIRMATION

* Tools required
Fan Type gauge (VFK0758)

1. Insert a work cassette and place the unit in the PLAY mode.
2. Insert a fan type tension gauge into pinch roller arm (portion A) and press it to "B" direction.
3. confirm that the tension gauge indicates 1650g (± 200g) when the rotation of pinch roller stopped.
4. If it is out of specification, reconfirm the pinch solenoid position.

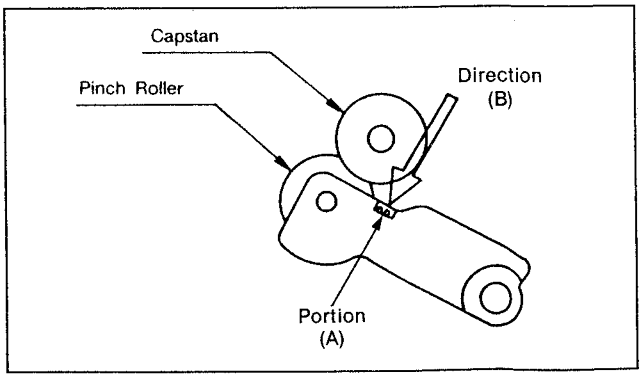

Capstan
Pinch Roller
Direction
(B)
Portion
(A)

Fig. P5-14-7 Pinch Roller Pressure

5-15. Replacement, Adjustment and Confirmation of Brake Solenoids

REPLACEMENT

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Open the main chassis unit (See disassembly sec./paragraph 8).
3. Unsolder the 3 lead wires (A) between the take-up solenoid and reel base P.C.Board as shown in Figure P5-15-1.

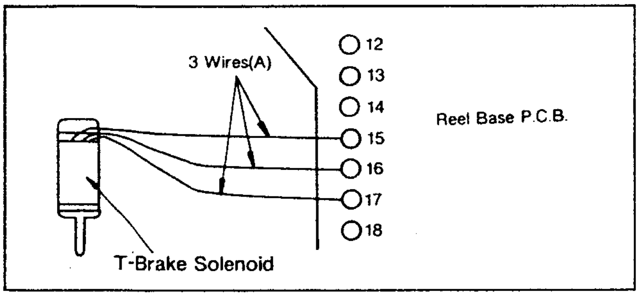

3 Wires(A)
12
13
14
15
16
17
18
Reel Base P.C.B.
T-Brake Solenoid

Fig. P5-15-1 T-Brake Solenoid Soldering

4. Unscrew 2 screws (C) on the take-up brake solenoid as shown in Figure P5-15-2 so that the solenoid can be lifted.
5. Unscrew the 2 screws (E) and remove the take-up brake solenoid as shown in Figure P5-15-2.

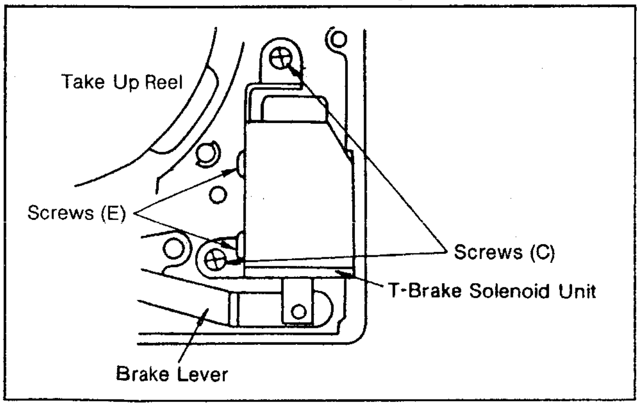

Take Up Reel
Screws (E)
Screws (C)
T-Brake Solenoid Unit
Brake Lever

Fig. P5-15-2 T-Brake Solenoid Unit Removal

6. Install the new take-up brake solenoid and solder the 3 lead wires (A) as shown in Figure P5-15-1.
7. Reverse the previous steps.
8. Open the sub chassis unit (See disassembly sec./paragraph 8).
9. Unsolder the 3 lead wires (C) between the supply brake solenoid and reel base P.C.Board as shown in Figure P5-15-3.

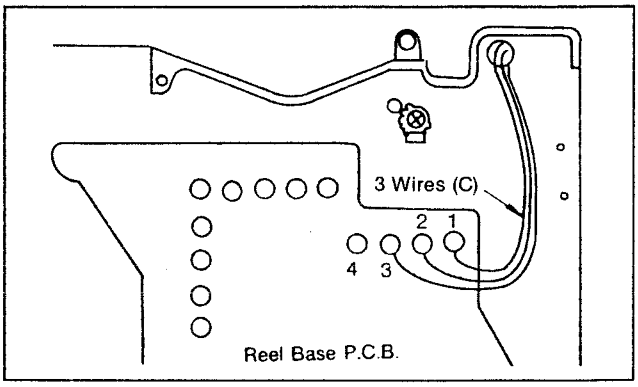

3 Wires (C)
2
1
4
3
Reel Base P.C.B.

Fig. P5-15-3 S-Brake Solenoid Soldering

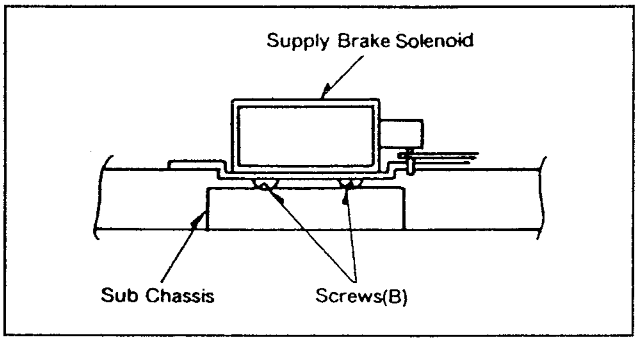

Supply Brake Solenoid
Sub Chassis
Screws(B)

Fig. P5-15-4 S-Brake Solenoid Removal

10. Unscrew the 2 screws (B) as shown in Figure P5-15-4 so that the supply brake solenoid can be removed.
11. Install the new supply brake solenoid and solder the 3 lead wires (C).
12. Reverse the previous steps.

ADJUSTMENT

The position adjustment of the solenoid is required only the supply side.

1. Release the supply brake manually as shown in Figure P5-15-5.
2. Confirm that the clearance A is 0.5 ~ 0.8mm as shown in Figure P5-15-5.

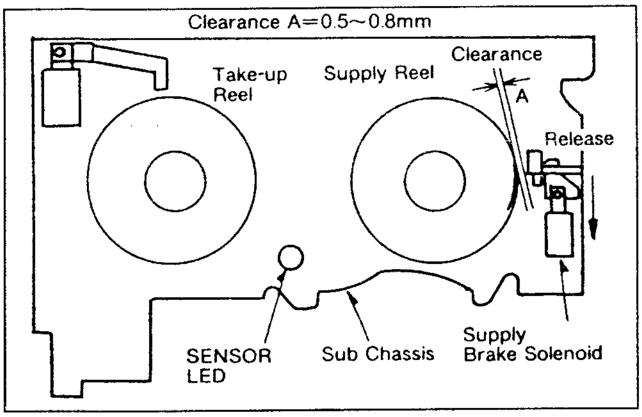

Clearance A=0.5~0.8mm
Take-up Reel
Supply Reel
Clearance
A
Release
SENSOR LED
Sub Chassis
Supply Brake Solenoid

Fig. P5-15-5 Supply Brake Solenoid Position

3. If it is not, slightly loosen the 2 screws (B) under the supply brake solenoid and adjust the solenoid position as shown in Figure P5-15-6.

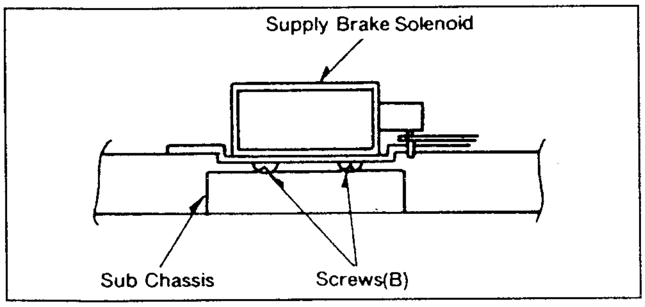

Supply Brake Solenoid
Sub Chassis
Screws(B)

Fig. P5-15-6 Side View of Sub Chassis

CONFIRMATION

After the replacement and adjustment, confirm the reel brake torque (See paragraph 5-7).

5-16. Replacement and adjustment of the Idler Gear Unit

REPLACEMENT

1. Remove the sub chassis. (See disassembly sec./paragraph 8).
2. Remove the E-ring (A) and spring (B) as shown in Figure P5-16-1.
3. Remove the idler gear unit.
4. Install the new idler Gear Unit and reverse the previous steps.
5. After replacement adjust the idler Gear position.

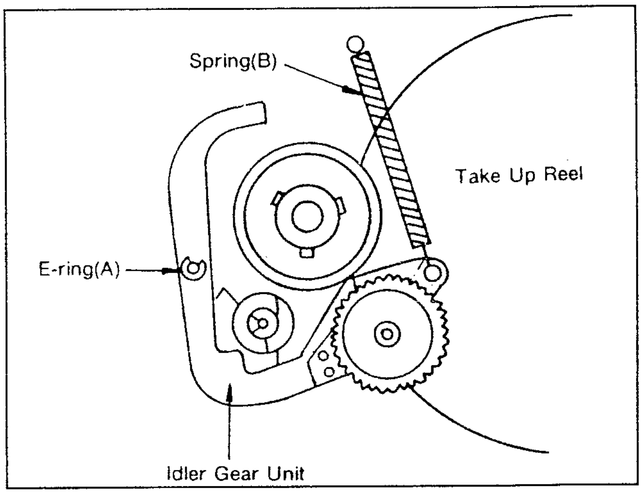

Spring(B)
Take Up Reel
E-ring(A)
Idler Gear Unit

Fig. P5-16-1 Idler Gear Unit Removal

ADJUSTMENT

- * Tools Required:
  Eccentric Screwdriver (VFK0357)

1. Turn the small reel up/down motor by hand so that the small reel table unit is placed in the upper position.
2. Confirm that the idler gear is contacted to the small reel table and take-up reel table as shown in Figure P5-16-2.
3. Release the take-up reel brake.
4. Turn the take-up reel by hand.
5. Confirm that the idler gear rotates smoothly.
6. When it makes the noise, slightly loosen the screw (C) and insert the eccentric screw driver (VFK0357) into the hole (D) as shown in Figure P5-16-2.
7. Adjust the position of the micro switch base so that the idler gear doesn't make the noise.

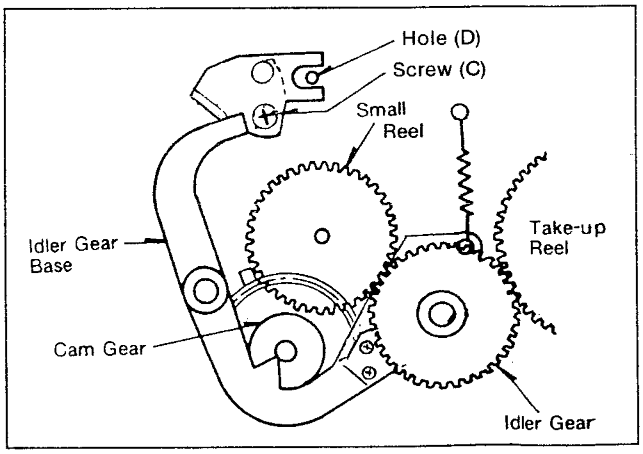

Hole (D)
Screw (C)
Small Reel
Take-up Reel
Idler Gear Base
Cam Gear
Idler Gear

Fig. P5-16-2 Idler Gear Position

5-17. Replacement of Small Reel Table Unit

1. Remove the sub chassis. (See disassembly sec./paragraph 8).
2. Confirm that the small cassette reel unit is in the down position. If it is not, turn the warm shaft so that the small cassette reel unit is in the down position as shown in Figure P5-17-1.

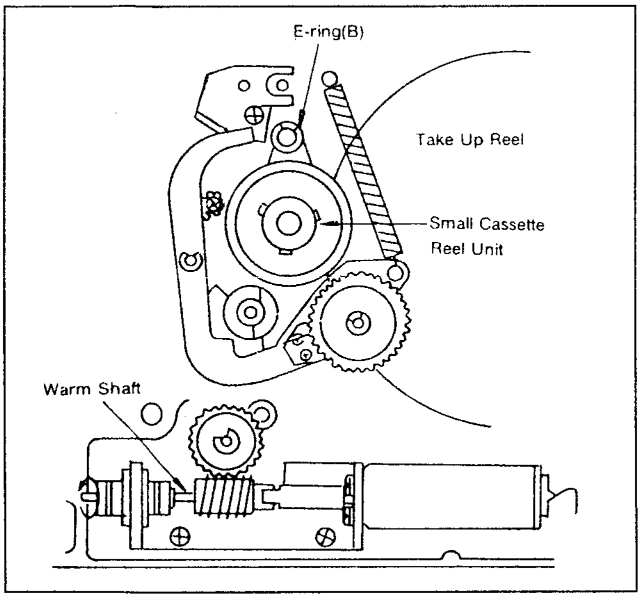

E-ring(B)
Take Up Reel
Small Cassette Reel Unit
Warm Shaft

Fig. P5-17-1 Small Reel Unit Removal

3. Remove the spring (A) as shown in Figure P5-17-2.

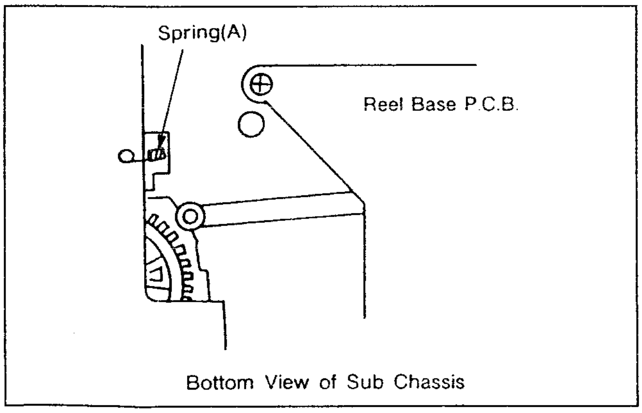

Spring(A)
Reel Base P.C.B.
Bottom View of Sub Chassis

Fig. P5-17-2 Spring Removal

4. Remove the E-ring (B) as shown in Figure P5-17-1 and remove the small cassette reel unit.
5. Install the new small cassette reel unit and reverse the previous steps.

5-18. Replacement of Supply and the Take-Up Reel Tables

1. Remove the sub chassis. (See disassembly sec./paragraph 8).
2. Remove the idler gear unit and small cassette reel unit. (See paragraphs 5-16 and 5-17).
3. Pull out the supply reel table and take-up reel table slowly and gently.

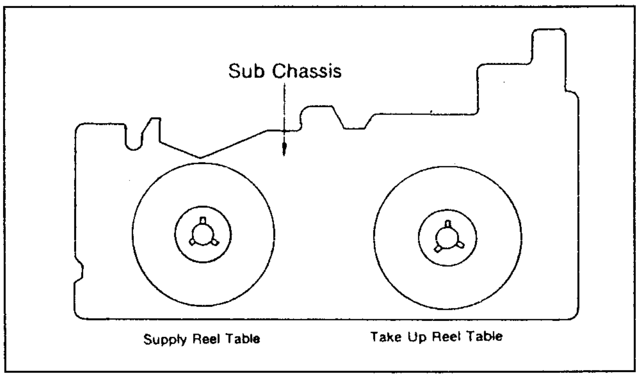

Sub Chassis
Supply Reel Table
Take Up Reel Table

Fig. P5-18-1 Reel Table Removal

4. Install the new reel table and reverse the previous steps.

*Important

In order to prevent the damage of ball bearing inside the reel table, put temporarily a spacer (paper, sponge, etc.) between the stator and reel table as shown in Figure P5-18-2 when the reel table is installed. After the installation of the reel table, remove the spacer slowly.

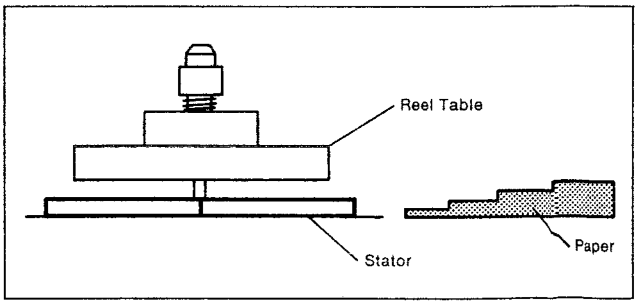

Reel Table
Stator
Paper

Fig. 5-18-2

5-19. Replacement of Loading Motor Thrust Bearing

1. Remove the top Panel (See disassembly sec./paragraph 1).
2. Unscrew the Lock Screw (A) of the belt cover and open the belt cover as shown in Figure P5-19-1.
3. Remove the E-ring (B) and remove the emergency eject wire as shown in Figure P5-19-1.

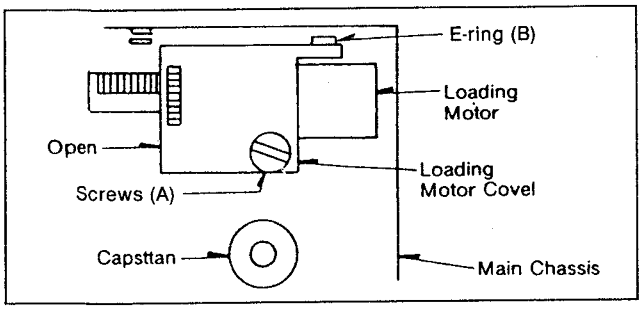

E-ring (B)
Loading Motor
Open
Loading Motor Covel
Screws (A)
Capsttan
Main Chassis

Fig. P5-19-1 Emergency Eject

4. Unscrew the 3 screws (C) and remove the loading motor unit as shown in Figure P5-19-2.

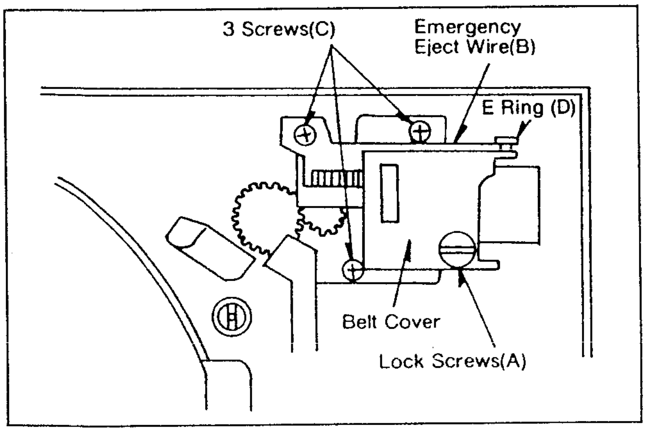

3 Screws(C)
Emergency Eject Wire(B)
E Ring (D)
Belt Cover
Lock Screws(A)

Fig. P5-19-2 Loading Motor Unit

5. Remove the loading belt and unscrew the 2 screws (B) as shown in Figure P5-19-3 so that the loading motor can be removed.

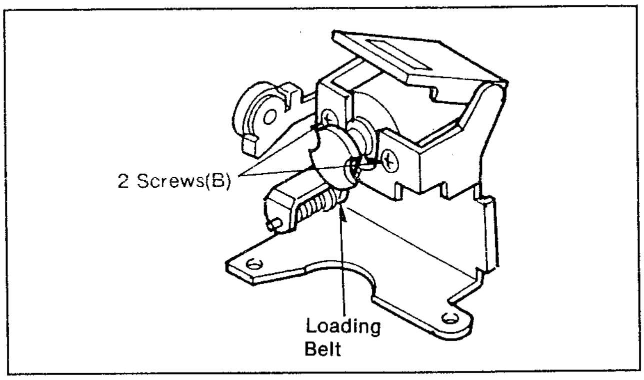

2 Screws(B)
Loading Belt

Fig. P5-19-3 Loading Motor

6. Remove the E-ring (C) from the belt cover and remove the Thrust bearing as shown in Figure P5-19-4.

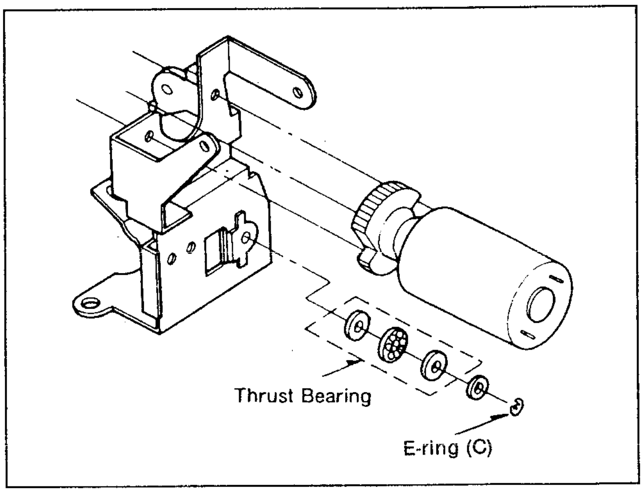

Thrust Bearing
E-ring (C)

Fig. P5-19-4 Thrust Bearing

7. Insert the new thrust bearing to the belt cover and reverse the previous steps.

5-20. Replacement of the Small Reel Up/Down Motor Thrust Bearing

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Remove the cassette compartment (See disassembly sec./Paragraph 7.)
3. Unsolder the 2 lead wires (A) of the small reel up/down motor.
4. Unscrew the 2 screws (B) and remove the up/down motor unit as shown in Figure P5-20-1.

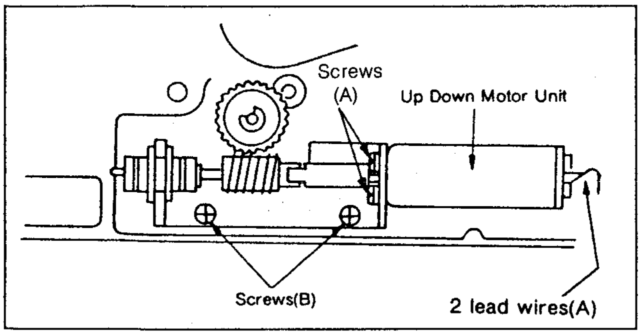

Screws
(A)
Up Down Motor Unit
Screws(B)
2 lead wires(A)

Fig. P5-20-1 Up Down Motor unit Removal

5. Unscrew the 2 screws (A) and remove the up/down motor as shown in Figure P5-20-2.
6. Remove the E-ring (B) and remove the 2 thrust bearings as shown in Figure P5-20-2.

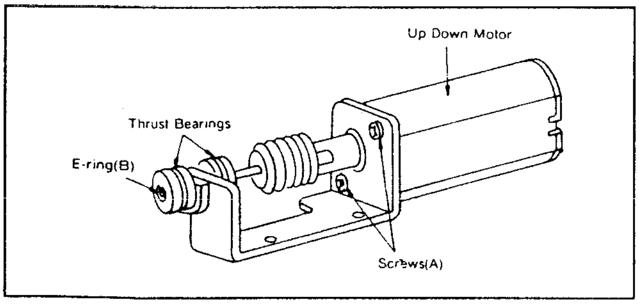

Up Down Motor
Thrust Bearings
E-ring(B)
Screws(A)

Fig. P5-20-2 Thrust Bearing Removal

7. Install the new thrust bearing and reverse the previous steps.

5-21. Replacement of the Cassette Size Detection Switch (Micro SW)

1. Unscrew the 2 screws (A) as shown in Figure P5-21-1 and remove the cassette size detection switch unit.

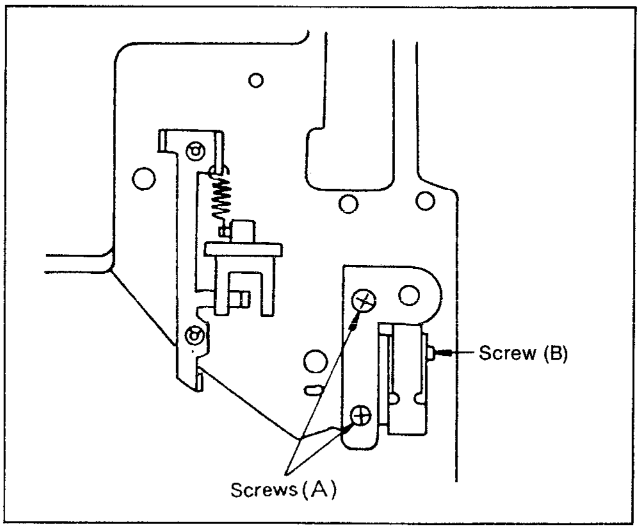

Screw (B)
Screws (A)

Fig. P5-21-1 Cassette Size Detection Switch

2. Unscrew the screw (B) as shown in Figure P5-21-1 so that the switch plate can be removed.
3. Unsolder the 2 lead wires of the cassette size detection switch.
4. Install the new cassette size detection switch and reverse the previous steps.

5-22. Replacement and Adjustment of the Emergency Eject Detect Switch (Leaf Switch)

REPLACEMENT

1. Remove the main chassis (See disassembly sec./paragraph 8).
2. Unsolder the wire (A) at the reel base P.C.Board as shown in Figure P5-22-1.

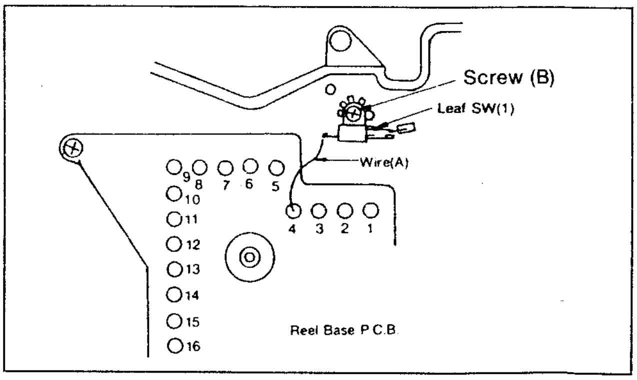

Screw (B)
Leaf SW(1)
Wire(A)
9 8 7 6 5
10
11
12
13
14
15
16
4 3 2 1
Reel Base P.C.B

Fig. P5-22-1 Emergency Eject Detection Switch

3. Unscrew the screw (B) as shown in Figure P5-22-1 and remove the emergency eject detection switch.
4. Install the new emergency eject detection switch and reverse the previous steps.
5. After replacement, adjust the position of the emergency eject detection switch.

ADJUSTMENT

1. Unscrew the screw (A) and open the loading motor cover to operate the emergency eject as shown in Figure P5-22-2.

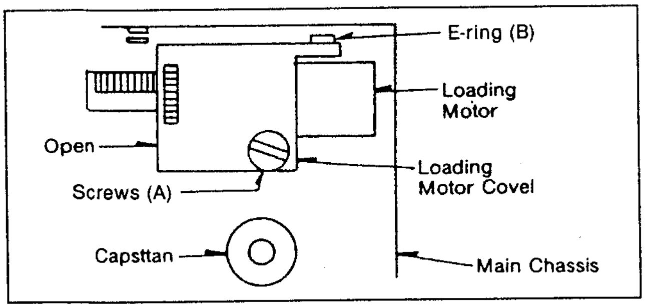

E-ring (B)
Loading Motor
Open
Loading Motor Covel
Screws (A)
Capsttan
Main Chassis

Fig. P5-22-2 Emergency Eject

2. Confirm that the idler touches the supply reel as shown in Figure P5-22-3.

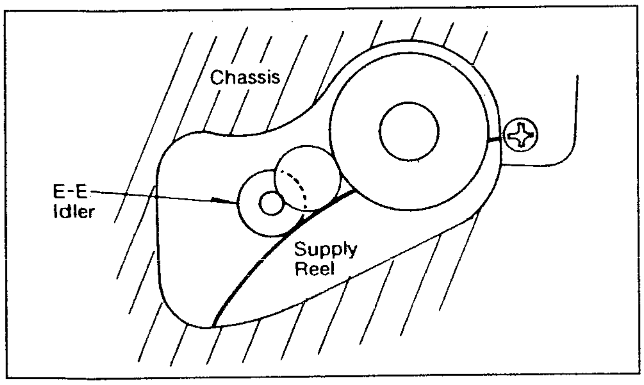

Chassis
E-E Idler
Supply Reel

Fig. P5-22-3 E-E Idler

3. Confirm that the emergency eject detect switch of chassis bottom is turned "ON".
4. If it is not, adjust emergency eject detect switch position so that the there is a little clearance when the E-E detect switch is turned "ON" as shown in Figure P5-22-4.

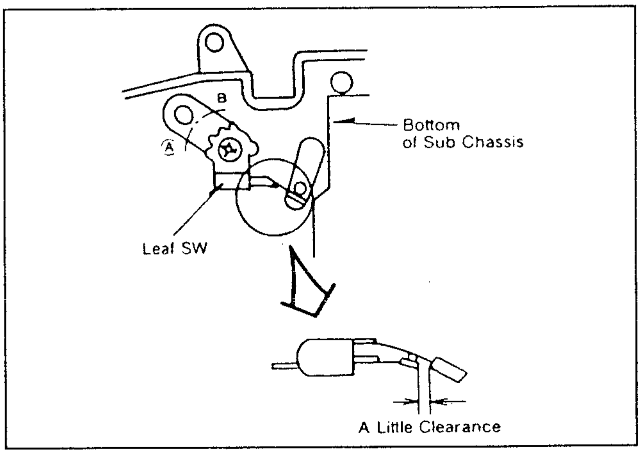

B
A
Bottom of Sub Chassis
Leaf SW
A Little Clearance

Fig. P5-22-4 E-E Detect Switch Position

5-23. Replacement and Adjustment of Eject Detection Switch (Leaf Switch)

REPLACEMENT

1. Remove the main and sub chassis unit (See disassembly sec./ paragraph 8).
2. Unsolder the wire (A) between the eject detection switch and reel base P.C.Board as shown in Figure P5-23-1.

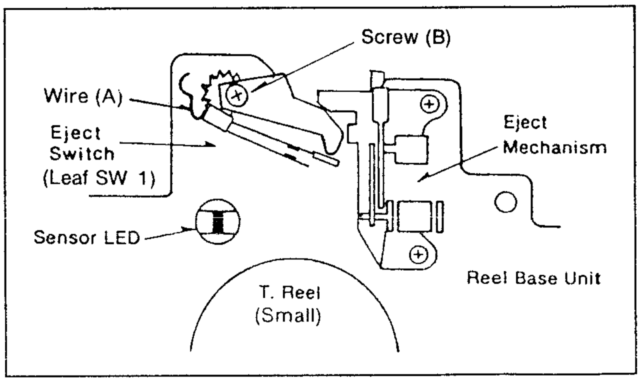

Screw (B)
Wire (A)
Eject Switch (Leaf SW 1)
Eject Mechanism
Sensor LED
T. Reel (Small)
Reel Base Unit

Fig. P5-23-1 Eject Detect Switch

3. Unscrew the screw (B) and remove the eject detection switch as shown in Figure P5-23-1.
4. Install the new eject detection switch and reverse the previous steps.
5. After replacement, the position of eject detection switch adjustment is required.

ADJUSTMENT

1. Push the portion (A) and place the eject detection lock mechanism in the cassette down condition.
2. Adjust the position of the eject detection switch by hand so that the clearance (B) of the switch is more than 0.5mm as shown in Figure P5-23-2.

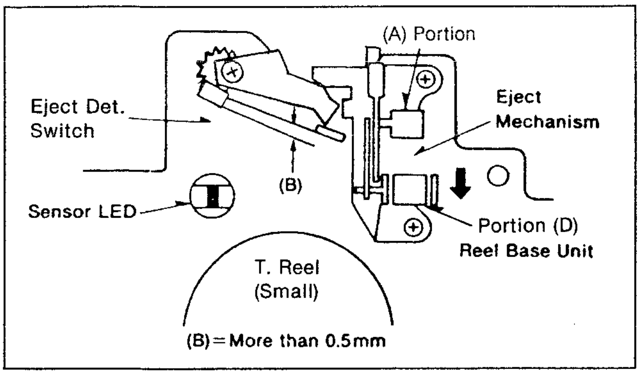

(A) Portion
Eject Det. Switch
Eject Mechanism
(B)
Sensor LED
Portion (D)
Reel Base Unit
T. Reel (Small)
(B)=More than 0.5mm

Fig. P5-23-2 Eject Switch Position

3. Confirm that the eject detection switch is turned "ON" when the eject mechanism is placed in the eject condition.
   (The eject mechanism is placed in the eject condition by pressing the portion (D) as the arrow direction as shown in Figure P5-23-2.)

5-24. Replacement and Adjustment of Small Reel Up/Down Limit Switches (Leaf Switch)

REPLACEMENT

1. Remove the sub chassis unit (See disassembly sec./paragraph 8).
2. Remove the idler gear unit and small reel unit (See paragraphs 5-16 and 5-17).
3. Unsolder the 2 lead wires of the small reel up/down limit switches.
4. Unscrew the 2 screw (A) and (B) as shown in Figure P5-24-1, and remove the small reel up/down limit switches.

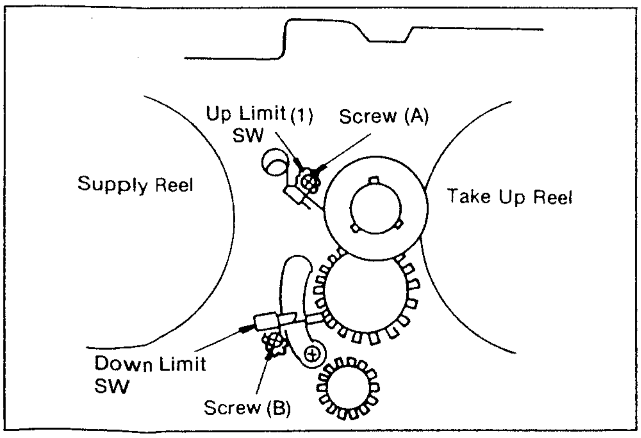

Up Limit (1) SW
Screw (A)
Supply Reel
Take Up Reel
Down Limit SW
Screw (B)

Fig. P5-24-1 Small Reel Up/Down Limit Switch

5. Install the new switches and reverse the previous steps.
6. After replacement, adjust the position of the small reel up/down limit switches.

ADJUSTMENT

1. Place the small reel in the up position by manually turning the up/down motor as shown in Figure P5-24-2.

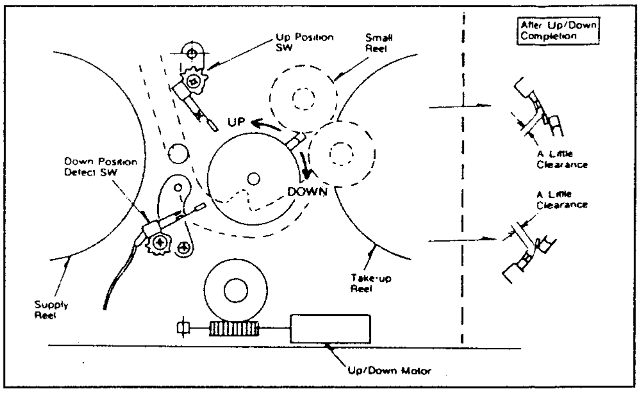

Up Position SW
Small Reel
After Up/Down Completion
UP
DOWN
Down Position Detect SW
A Little Clearance
A Little Clearance
Take-up Reel
Supply Reel
Up/Down Motor

Fig. P5-24-2 Small Reel up/Down Limit Switches

2. Confirm that the up position detect switch is "ON" when the up/down motor is stopped at the reel up completion.
3. If it is not, adjust the position of the up detect switch so that there is a little clearance when the up/down motor is stopped at the small reel up completion as shown in Figure P5-24-2.
4. Place the small reel in the down position by turning the up/down motor as shown in Figure P5-24-2.
5. Confirm that the down position detect switch is ON when the up/down motor is stopped at the reel down completion.
6. If it is not, adjust the position of the down detect switch so that there is a little clearance when the up/down motor is sopped at the small reel down completion as shown in Figure P5-24-2.

5-25. Replacement of Recording Inhibit Switch

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Remove the cassette compartment (See disassembly sec./paragraph 7).
3. Unsolder the lead wire (A) and then unsolder 4 solder points (D). Unscrew the screw (B) so that the recording inhibit switch unit can be removed as shown in Figure P5-25-1.

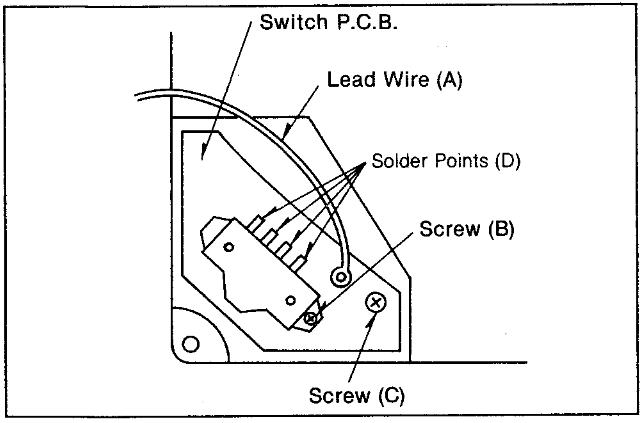

Switch P.C.B.
Lead Wire (A)
Solder Points (D)
Screw (B)
Screw (C)

Fig. P5-25-1

4. Install the new switch unit and reverse the previous steps.

5-26. Replacement of Drum Brush

1. Remove the top panel (See disassembly sec./paragraph 1).
2. Unscrew the 2 screws (A) as shown in Figure P5-26-1 and remove the brush cover.

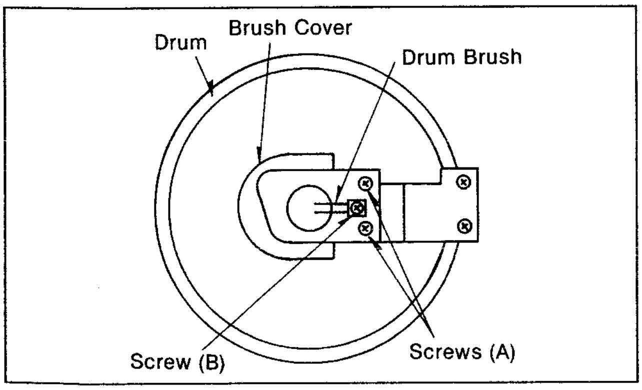

Drum
Brush Cover
Drum Brush
Screw (B)
Screws (A)

Fig. P5-26-1 Drum Brush Removal

3. Unscrew the screw (B) as shown in Figure P5-26-1 and remove the drum brush.
4. Install the new drum brush and reverse the previous steps.

SECTION 3

ELECTRICAL ADJUSTMENT PROCEDURES

This section covers the electrical adjustment procedures.

Note:

1. Be sure to turn off the power prior to opening the unit, before changing the position of any switch, and especially before removing or reinserting any circuit board.
2. After servicing and adjustment, see to it that all parts such as insulation barriers, insulators, shields, jumper wires, dip switches and wiring harnesses are properly re-installed as originally found.

CONTENTS

1. **SAFETY PRECAUTIONS** 3- 1
2. **INFORMATION FOR ELECTRICAL ADJUSTMENT** 3- 2
   - 2-1. PREPARATION FOR ELECTRICAL ADJUSTMENT 3- 2
   - 2-2. MAIN ADJUSTMENT FLOWCHART 3- 3
   - 2-3. RECOMMENDED TEST AND SERVICE EQUIPMENT 3- 4

ELECTRICAL ADJUSTMENT PROCEDURES

1. **POWER SUPPLY BOARD** 3- 5
   - 1-1. +5V SYSCON ADJUSTMENT 3- 5
   - 1-2. +5V ADJUSTMENT 3- 6
   - 1-3. −5V ADJUSTMENT 3- 6
   - 1-4. +9V ADJUSTMENT 3- 6
   - 1-5. +48V CONFIRMATION 3- 7

2. **SYSTEM CONTROL BOARD** 3- 7
   - 2-1. BATTERY REMAINING DETECTION LEVEL ADJUSTMENT 3- 8

3. **SERVO BOARD** 3- 9
   - 3-1. TENSION OFF-SET ADJUSTMENT 3- 10
   - 3-2. TENSION SPRING PRESSURE CONFIRMATION 3- 11
   - 3-3. SUPPLY TENSION ADJUSTMENT 3- 12
   - 3-4. TAKE-UP TENSION ADJUSTMENT 3- 13
   - 3-5. TENSION FINAL CONFIRMATION 3- 14
   - 3-6. TRACKING FIX ADJUSTMENT 3- 15
   - 3-7. PG SHIFTER ADJUSTMENT 3- 16
   - 3-8. REC SHIFTER ADJUSTMENT 3- 17
   - 3-9. PG SHIFTER CONFIRMATION 3- 18

4. **METER BOARD** 3- 19
   - 4-1. BATTERY METER ADJUSTMENT 3- 19

5. **AUDIO BOARD (1/2) -LINEAR AUDIO SECTION-** 3- 20
   - 5-1. MACHINE CONDITION/SETTINGS 3- 21
   - 5-2. DOLBY ENCODE LEVEL ADJUSTMENT 3- 21
   - 5-3. CH1/CH2 LINE OUTPUT LEVEL ADJUSTMENT 3- 22
   - 5-4. CH1/CH2 METER ADJUSTMENT 3- 22
   - 5-5. PLAYBACK EQ DOLBY DECODE ADJUSTMENT 3- 23
   - 5-6. PLAYBACK PHASE CONFIRMATION 3- 24
   - 5-7. AUDIO BIAS TRAP ADJUSTMENT 3- 25
   - 5-8. AUDIO BIAS CURRENT ADJUSTMENT 3- 26
   - 5-9. RECORDING FREQUENCY RESPONSE ADJUSTMENT 3- 27
   - 5-10. AUDIO RECORDING CURRENT ADJUSTMENT 3- 28
   - 5-11. AUDIO RECORDING PHASE ADJUSTMENT 3- 28
   - 5-12. FE HEAD VOLTAGE CONFIRMATION 3- 29
   - 5-13. TC SELF REC/PB LEVEL CONFIRMATION 3- 30

6. **VIDEO 2 BOARD** ········ 3- 31
6-1. MACHINE CONDITION/SETTINGS ········ 3- 32
6-2. Y TERM PRESET POSITION ADJUSTMENT ········ 3- 32
6-3. Y EQ3 ADJUSTMENT ········ 3- 33
6-4. C TERM PRESET POSITION ADJUSTMENT ········ 3- 34
6-5. C EQ3 ADJUSTMENT ········ 3- 34
6-6. Y PLAYBACK RF LEVEL ADJUSTMENT ········ 3- 35
6-7. Y SUPER LIMITER PULSE POSITION ADJUSTMENT ········ 3- 35
6-8. Y DE-MODULATOR BALANCE ADJUSTMENT ········ 3- 36
6-9-1. Y NON-LINEAR DE-EMPHASIS LEVEL ADJUSTMENT ········ 3- 37
6-9-2. Y DEMOD OUTPUT DC LEVEL ADJUSTMENT ········ 3- 37
6-10. Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT ········ 3- 38
6-11. C PLAYBACK RF LEVEL ADJUSTMENT ········ 3- 38
6-12. C SUPER LIMITER PULSE POSITION ADJUSTMENT ········ 3- 39
6-13. C DE-MODULATOR BALANCE ADJUSTMENT ········ 3- 40
6-14-1. C NON-LINEAR DE-EMPHASIS LEVEL ADJUSTMENT ········ 3- 41
6-14-2. C DEMOD OUTPUT DC LEVEL ADJUSTMENT ········ 3- 42
6-15. C PLAYBACK FREQUENCY RESPONSE ADJUSTMENT ········ 3- 43

7. **VIDEO 3 AND VIDEO 4 BOARD (1/2)** ········ 3- 44
7-1. MACHINE CONDITION/SETTINGS ········ 3- 45
7-2. Y BURST SEPARATION ADJUSTMENT (1)(COARSE) ········ 3- 45
7-3. Y BURST SEPARATION ADJUSTMENT (2)(FINE) ········ 3- 46
7-4. C BURST SEPARATION ADJUSTMENT (1)(COARSE) ········ 3- 46
7-5. C BURST SEPARATION ADJUSTMENT (2)(FINE) ········ 3- 47
7-6. Y APC ADJUSTMENT (1)(COARSE) ········ 3- 48
7-7. Y APC ADJUSTMENT (2)(FINE) ········ 3- 48
7-8. C APC ADJUSTMENT (1)(COARSE) ········ 3- 49
7-9. C APC ADJUSTMENT (2)(FINE) ········ 3- 49
7-10. Y A/D REFERENCE VOLTAGE ADJUSTMENT ········ 3- 50
7-11. Y A/D INPUT LEVEL ADJUSTMENT ········ 3- 50
7-12. C A/D REFERENCE VOLTAGE ADJUSTMENT ········ 3- 51
7-13. C A/D INPUT LEVEL ADJUSTMENT ········ 3- 51
7-14. VIDEO OUTPUT LEVEL ADJUSTMENT ········ 3- 52
7-15. CARRIER LEAKAGE ADJUSTMENT ········ 3- 52
7-16. BURST LEVEL ADJUSTMENT ········ 3- 53
7-17. VIDEO OUTPUT VECTOR ADJUSTMENT ········ 3- 53
7-18. VIDEO 2 OUTPUT LEVEL CONFIRMATION ········ 3- 54
7-19. VIDEO 2 OUTPUT VECTOR CONFIRMATION ········ 3- 55
7-20. CHARACTOR LEVEL CONFIRMATION ········ 3- 55
7-21. COMPONENT Y OUTPUT LEVEL ADJUSTMENT ········ 3- 56
7-22. COMPONENT Pb OUTPUT LEVEL ADJUSTMENT ········ 3- 56
7-23. COMPONENT Pr OUTPUT LEVEL ADJUSTMENT ········ 3- 57
7-24. S-VIDEO Y OUTPUT LEVEL CONFIRMATION ········ 3- 57
7-25. S-VIDEO C OUTPUT LEVEL ADJUSTMENT ········ 3- 58
7-26. SAVE MODE CONFIRMATION ········ 3- 59

9. **DECODER & CTCM BOARD (1/2)** ········ 3- 60
9-1. MACHINE CONDITION/SETTINGS ········ 3- 61
9-2. SIGNAL SOURSE SETTING ········ 3- 61

9-3-1. VIDEO A/D INPUT LEVEL ADJUSTMENT (1) ········ 3- 62
9-3-2. VIDEO A/D INPUT LEVEL ADJUSTMENT (2) ········ 3- 62
9-4. E-E COMPONENT Y LEVEL ADJUSTMENT ········ 3- 63
9-5. E-E COMPONENT Pr/Pb LEVEL ADJUSTMENT ········ 3- 64
9-6. E-E CTCM OUTPUT LEVEL ADJUSTMENT ········ 3- 65
9-7. Y FREQUENCY RESPONSE ADJUSTMENT (FOR Y/C INPUT) ········ 3- 66
9-8. Y FREQUENCY RESPONSE ADJUSTMENT (FOR LINE INPUT) ········ 3- 67
9-9. COMPONENT INPUT CARRIER BALANCE ADJUSTMENT (FINE) ········ 3- 68
9-10. LINE INPUT CARRIER BALANCE ADJUSTMENT (FINE) ········ 3- 69
9-11. LINE INPUT Y LEVEL ADJUSTMENT (FINE) ········ 3- 70
9-12. Y/C INPUT Y LEVEL ADJUSTMENT (FINE) ········ 3- 71
9-13. Y BURST LEVEL ADJUSTMENT ········ 3- 72
9-14. AXIS PHASE ADJUSTMENT (FINE) ········ 3- 73
9-15. LINE INPUT Pr LEVEL ADJUSTMENT (FINE) ········ 3- 74
9-16. Y/C INPUT Pr LEVEL ADJUSTMENT (FINE) ········ 3- 75
9-17. LINE INPUT Pb LEVEL ADJUSTMENT (FINE) ········ 3- 76
9-18. VIDEO OUTPUT CONFIRMATION ········ 3- 77
9-19. RESET WIDTH ADJUSTMENT ········ 3- 78
9-20. INPUT SCH ADJUSTMENT ········ 3- 79
9-21. WIDE CONFIRMATION ········ 3- 80

10. VIDEO 1 AND VIDEO 2 BOARD (1/2) ········ 3- 81
10-1. MACHINE CONDITION/SETTINGS ········ 3- 82
10-2. Y NON-LINEAR PRE-EMPHASIS LEVEL ADJUSTMENT ········ 3- 82
10-3. Y NON-LINEAR LIMITER LEVEL ADJUSTMENT ········ 3- 83
10-4. Y CLAMP PULSE CONFIRMATION ········ 3- 84
10-5. C NON-LINEAR PRE-EMPHASIS LEVEL ADJUSTMENT ········ 3- 85
10-6. C NON-LINEAR LIMITER LEVEL ADJUSTMENT ········ 3- 85
10-7. Y PEDESTAL FREQUENCY ADJUSTMENT ········ 3- 86
10-8. C BLANKING FREQUENCY ADJUSTMENT ········ 3- 87
10-9. Y DEVIATION ADJUSTMENT ········ 3- 88
10-10. Y WHITE & DARK CLIP ADJUSTMENT ········ 3- 89
10-11. C DEVIATION ADJUSTMENT ········ 3- 90
10-12. C POSITIVE & NEGATIVE CLIP LEVEL ADJUSTMENT ········ 3- 91
10-13. VIDEO METER ADJUSTMENT ········ 3- 92
10-14. Y SUPER LIMITER ADJUSTMENT ········ 3- 92
10-15. C SUPER LIMITER ADJUSTMENT ········ 3- 93
10-16. Y CH1 & CH2 RECORDING CURRENT ADJUSTMENT ········ 3- 94
10-17. C CH1 & CH2 RECORDING CURRENT ADJUSTMENT ········ 3- 95
10-18. Y HEAD AMP OUTPUT BALANCE ADJUSTMENT ········ 3- 96
10-19. C HEAD AMP OUTPUT BALANCE ADJUSTMENT ········ 3- 96
10-20. Y NON-LINEAR DE-EMPHASIS LIMITER LEVEL ADJUSTMENT ········ 3- 97
10-21. C NON-LINEAR DE-EMPHASIS LIMITER LEVEL ADJUSTMENT ········ 3- 98
10-22-1. Y EQ2 ADJUSTMENT ········ 3- 98
10-22-2. C EQ2 ADJUSTMENT ········ 3- 99
10-23. Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (FINE) ········ 3-100
10-24. C PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (FINE) ········ 3-101
10-25. Y PLAYBACK RF LEVEL ADJUSTMENT (FINE) ········ 3-101
10-26. Y PLAYBACK LIMITER IN RF LEVEL ADJUSTMENT (FINE) ········ 3-102
10-27. C PLAYBACK RF LEVEL ADJUSTMENT (FINE) ········ 3-103

10-28. C PLAYBACK LIMITER IN RF LEVEL ADJUSTMENT (FINE) ······ 3-103
10-29. Y D.O. DETECTION LEVEL ADJUSTMENT ······ 3-104
10-30. C D.O. DETECTION LEVEL ADJUSTMENT ······ 3-105
10-31. Y SELF RECORDING/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT ······ 3-106
10-32. C SELF RECORDING/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT ······ 3-107
10-33. Y SELF RECORDING K-FACTOR CONFIRMATION ······ 3-108

11. AUDIO BOARD (2/2) -FM AUDIO SECTION - ······ 3-109
11-1. MACHINE CONDITION/SETTINGS ······ 3-110
11-2. FM E-E LEVEL ADJUSTMENT ······ 3-110
11-3. CH3/CH4 METER ADJUSTMENT ······ 3-111
11-4. FM CARRIER FREQUENCY ADJUSTMENT ······ 3-111
11-5. FM RECORDING CURRENT ADJUSTMENT ······ 3-112
11-6. FM PLAYBACK LEVEL ADJUSTMENT ······ 3-113
11-7. FM PLAYBACK LEVEL CONFIRMATION ······ 3-114

12. VIDEO 1 AND VIDEO 2 BOARD (2/2) ······ 3-115
12-1. Y OVER-SHOOT CONFIRMATION ······ 3-116
12-2. C OVER-SHOOT CONFIRMATION ······ 3-117
12-3. TRACKING METER ADJUSTMENT ······ 3-118

13. VIDEO 3 AND VIDEO 4 BOARD (2/2) ······ 3-119
13-1. MACHINE CONDITION/SETTINGS ······ 3-120
13-2. BASIC ADJUSTMENT CONNECTIONS ······ 3-120
13-3. S/H ADJUSTMENT ······ 3-121
13-4. 17.7MHz VCO ADJUSTMENT ······ 3-122
13-5. REF. SCH ADJUSTMENT ······ 3-123
13-6. SYSTEM SC PHASE ADJUSTMENT ······ 3-124
13-7. SCH PHASE ADJUSTMENT ······ 3-124
13-8. SYSTEM H PHASE ADJUSTMENT ······ 3-125
13-9. COMPOSITE OUTPUT Y/C TIMING ADJUSTMENT ······ 3-126
13-10. COMPONENT OUTPUT Y/C TIMING ADJUSTMENT ······ 3-127
13-11. VIDEO PHASE ADJUSTMENT ······ 3-128
13-12. CK2 PHASE ADJUSTMENT ······ 3-129

14. DECODER & CTCM BOARD (2/2) ······ 3-130
14-1. MACHINE CONDITION/SETTINGS ······ 3-130
14-2(A). COMPONENT INPUT Y/C TIMING ADJUSTMENT (FINE) (BY USING WAVEFORM MONITOR) ······ 3-131
14-2(B). COMPONENT INPUT Y/C TIMING ADJUSTMENT (FINE) (BY USING OSCILLOSCOPE) ······ 3-132
14-3(A). LINE INPUT Y/C TIMING ADJUSTMENT (FINE) (BY USING WAVEFORM MONITOR) ······ 3-133
14-3(B). LINE INPUT Y/C TIMING ADJUSTMENT (FINE)(BY USING OSCILLOSCOPE) ······ 3-134
14-4. 13.5MHz PLL ADJUSTMENT (FINE 1) ······ 3-135
14-5. 13.5MHz PLL ADJUSTMENT (FINE 2) ······ 3-136
14-6. VISC PHASE CONFIRMATION & ADJUSTMENT ······ 3-137

15. FRONT BOARD ······ 3-138
15-1. X'TAL ADJUSTMENT ······ 3-138

1. SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers and insulation shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK METHOD

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞.

LEAKAGE CURRENT HOT CHECK METHOD (See Figure 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ, 10 watts resistor, in parallel with a 0.15µF capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000Ω/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the specified limits, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

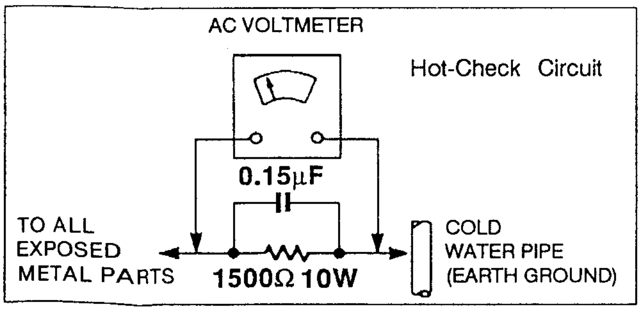


Figure 1

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices.
Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as anti-static that can't generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of the replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

2. INFORMATION FOR ELECTRICAL ADJUSTMENT

This section describes adjustment procedure and method for AU-55H.
Refer to following information before electrical adjustments.

2-1. PREPARATION FOR ELECTRICAL ADJUSTMENT

1. How to supply the component signal to CAMERA INPUT.

Use a component signal generator (TSG-131), and prepare a component input cable (PART No. VFK0385).
Basically these electrical adjustments need the following input signal level.

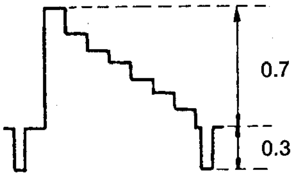
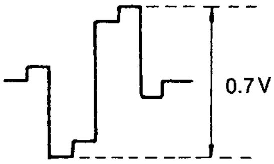
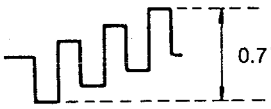
SIGNAL	LEVEL W/7.5% SET UP
Component Y	
Component PR	
Component PB	

Fig. 2-1 Input Signal Chart

2. How to connect the Component Input cable as shown in Figure 2-2.

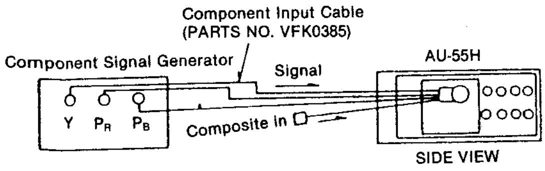


Fig. 2-2 Proper Signal Input Connection

CAUTION FOR LITHIUM BATTERY

CAUTION

Danger of explosion if lithium battery is incorrectly replaced. The battery must only be replaced by suitably qualified service personnel. Replace only wiht the same or equivalent type recommended by the aqulpment manufacturer. Discard used batteries according to manufacturer's instructions.

VARNING

Explosionsfara vid felakligl batteribyle. Använd samma batterilyp eller en ekvivalent typ som rekommenderas av apparatttillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

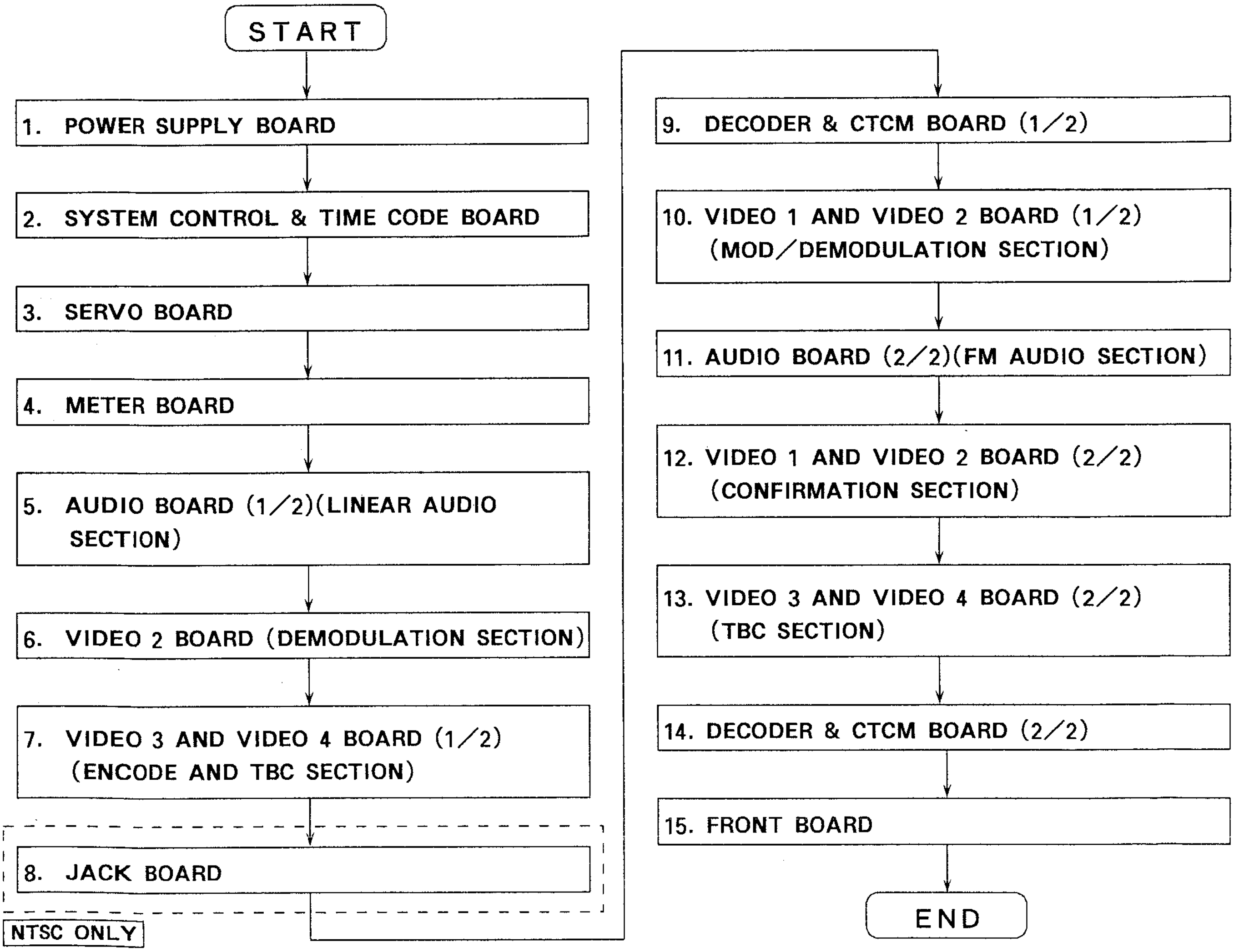
ADVARSEL!

Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

2-2. MAIN ADJUSTMENT FLOWCHART

It is important to adjust each according to the correct steps which are shown as "The Main Adjustment Flowchart" below and "The Section Adjustment Flowchart" at the top page of each section.

MAIN ADJUSTMENT FLOWCHART

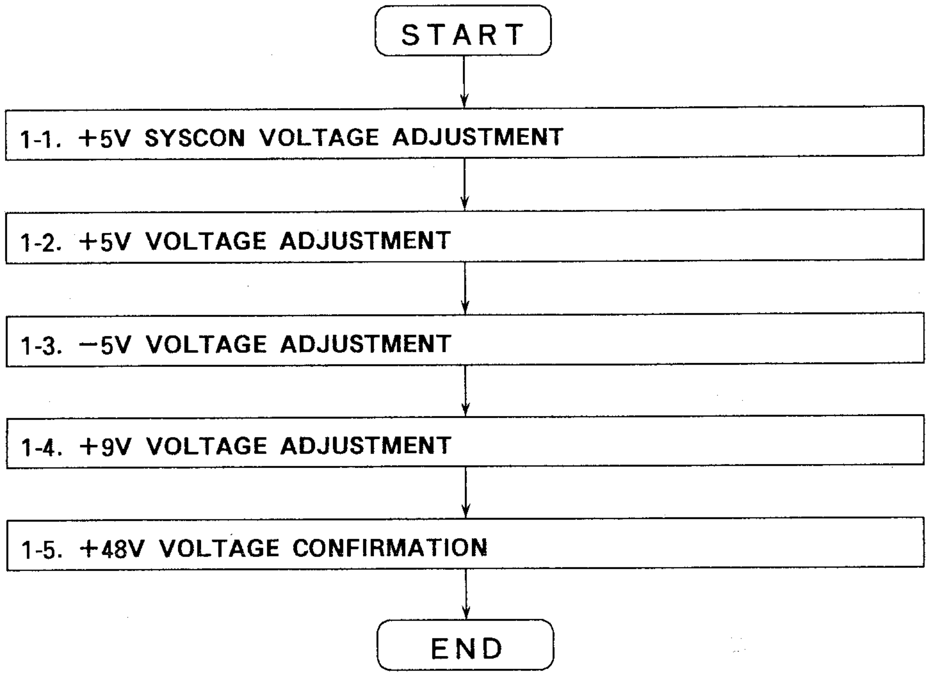

START
1. POWER SUPPLY BOARD
2. SYSTEM CONTROL & TIME CODE BOARD
3. SERVO BOARD
4. METER BOARD
5. AUDIO BOARD (1/2)(LINEAR AUDIO SECTION)
6. VIDEO 2 BOARD (DEMODULATION SECTION)
7. VIDEO 3 AND VIDEO 4 BOARD (1/2) (ENCODE AND TBC SECTION)
8. JACK BOARD
NTSC ONLY
9. DECODER & CTCM BOARD (1/2)
10. VIDEO 1 AND VIDEO 2 BOARD (1/2) (MOD/DEMODULATION SECTION)
11. AUDIO BOARD (2/2)(FM AUDIO SECTION)
12. VIDEO 1 AND VIDEO 2 BOARD (2/2) (CONFIRMATION SECTION)
13. VIDEO 3 AND VIDEO 4 BOARD (2/2) (TBC SECTION)
14. DECODER & CTCM BOARD (2/2)
15. FRONT BOARD
END

2-3. RECOMMENDED TEST AND SERVICE EQUIPMENT

PART No.	NAME	REMARK
TSG-131 (OPTION 04)	COMPOSITE / COMPONENT / YC / Y CTCM SIGNAL GENERATOR	TEKTRONIX
1751	SCH METER (WFM, SCH, VECTOR etc.) FOR PAL	TEKTRONIX
-------	DIGITAL VOLT METER	---------
-------	FREQUENCY COUNTER	1mHz Range ~
-------	DUAL TRACE OSCILLOSCOPE	Frequency bandwidth more than 100MHz
-------	VTVM (ACVM) Frequency Band width 4Hz ~ 500KHz	Sound Technology or Audio Precision equivalent
-------	SINEWAVE SIGNAL GENERATOR	Frequency bandwidth 20MHz
VFK0132	TENTELOMETER	TENTEL
VFM7189EG	ALIGNMENT TAPE FOR PAL MODEL	(Large cassette)
ET-100YC	S-VIDEO/BNC ADAPTOR	---------
VFK0859	EXTENSION BOARD	
VFK0385	COMPONENT INPUT CABLE	
VFK0357	Eccentric Screw Driver	

1. POWER SUPPLY BOARD

POWER SUPPLY SECTION FLOWCHART


START
1-1. +5V SYSCON VOLTAGE ADJUSTMENT
1-2. +5V VOLTAGE ADJUSTMENT
1-3. −5V VOLTAGE ADJUSTMENT
1-4. +9V VOLTAGE ADJUSTMENT
1-5. +48V VOLTAGE CONFIRMATION
END

< POWER SUPPLY BOARD >

1-1. +5V SYSCON ADJUSTMENT

(POWER)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
P806-pin6 (on DRIVER P.C.BOARD)	REC	BLANK ■ TAPE ALIGNMENT ☐ TAPE	DIGITAL VOLT METER	---------	VR3 (+5V SYS)

ADJUSTMENT PROCEDURE & SPECIFICATION	
DIGITAL VOLT METER → P809-pin6	SPEC. : +5V (+0.1 / -0V)

1-2. +5V ADJUSTMENT

(POWER)

<table>
<tr><th>TEST POINT</th><th>MODE</th><th>TAPE USED</th><th>M.EQ.</th><th>INPUT SIGNAL</th><th>ADJUSTMENT</th></tr>
<tr><td rowspan="2">P8-pin2
(on VIDEO MOTHER P.C.BOARD)</td><td rowspan="2">REC</td><td>BLANK
■ TAPE</td><td rowspan="2">DIGITAL VOLT METER</td><td rowspan="2">---------</td><td rowspan="2">VR4 (+5V)</td></tr>
<tr><td>ALIGNMENT
☐ TAPE</td></tr>
<tr><td colspan="6">ADJUSTMENT PROCEDURE & SPECIFICATION</td></tr>
<tr><td colspan="3">DIGITAL VOLT METER → P8-pin2</td><td colspan="3">SPEC. : +5V (+/- 0.1V)</td></tr>
</table>

1-3. -5V ADJUSTMENT

(POWER)

<table>
<tr><th>TEST POINT</th><th>MODE</th><th>TAPE USED</th><th>M.EQ.</th><th>INPUT SIGNAL</th><th>ADJUSTMENT</th></tr>
<tr><td rowspan="2">P8-pin1
(on VIDEO MOTHER P.C.BOARD)</td><td rowspan="2">REC</td><td>BLANK
■ TAPE</td><td rowspan="2">DIGITAL VOLT METER</td><td rowspan="2">---------</td><td rowspan="2">VR1 (-5V)</td></tr>
<tr><td>ALIGNMENT
☐ TAPE</td></tr>
<tr><td colspan="6">ADJUSTMENT PROCEDURE & SPECIFICATION</td></tr>
<tr><td colspan="3">DIGITAL VOLT METER → P8-pin1</td><td colspan="3">SPEC. : -5V (+/- 0.1V)</td></tr>
</table>

1-4. +9V ADJUSTMENT

(POWER)

<table>
<tr><th>TEST POINT</th><th>MODE</th><th>TAPE USED</th><th>M.EQ.</th><th>INPUT SIGNAL</th><th>ADJUSTMENT</th></tr>
<tr><td rowspan="2">P7-pin2
(on VIDEO MOTHER P.C.BOARD)</td><td rowspan="2">REC</td><td>BLANK
■ TAPE</td><td rowspan="2">DIGITAL VOLT METER</td><td rowspan="2">---------</td><td rowspan="2">VR2 (+9V)</td></tr>
<tr><td>ALIGNMENT
☐ TAPE</td></tr>
<tr><td colspan="6">ADJUSTMENT PROCEDURE & SPECIFICATION</td></tr>
<tr><td colspan="3">DIGITAL VOLT METER → P7-pin2</td><td colspan="3">SPEC. : +9V (+/-0.1V)</td></tr>
</table>

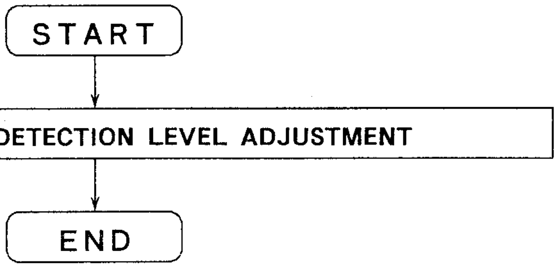
1-5. +48V CONFIRMATION

(POWER)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
P907-pin6 (on JACK P.C.BOARD)	REC	■ BLANK TAPE ☐ ALIGNMENT TAPE	DIGITAL VOLT METER	---------	-----------
ADJUSTMENT PROCEDURE & SPECIFICATION					
DIGITAL VOLT METER → P907-pin6			After the previous adjustments, confirm this voltage.		

2. SYSTEM CONTROL BOARD

SYSTEM CONTROL SECTION FLOWCHART


START
2-1. BATTERY REMAINING DETECTION LEVEL ADJUSTMENT
END

< SYSTEM CONTROL P.C.BOARD SECTION >

2-1. BATTERY REMAINING DETECTION LEVEL ADJUSTMENT

(SYSTEM CONTROL)

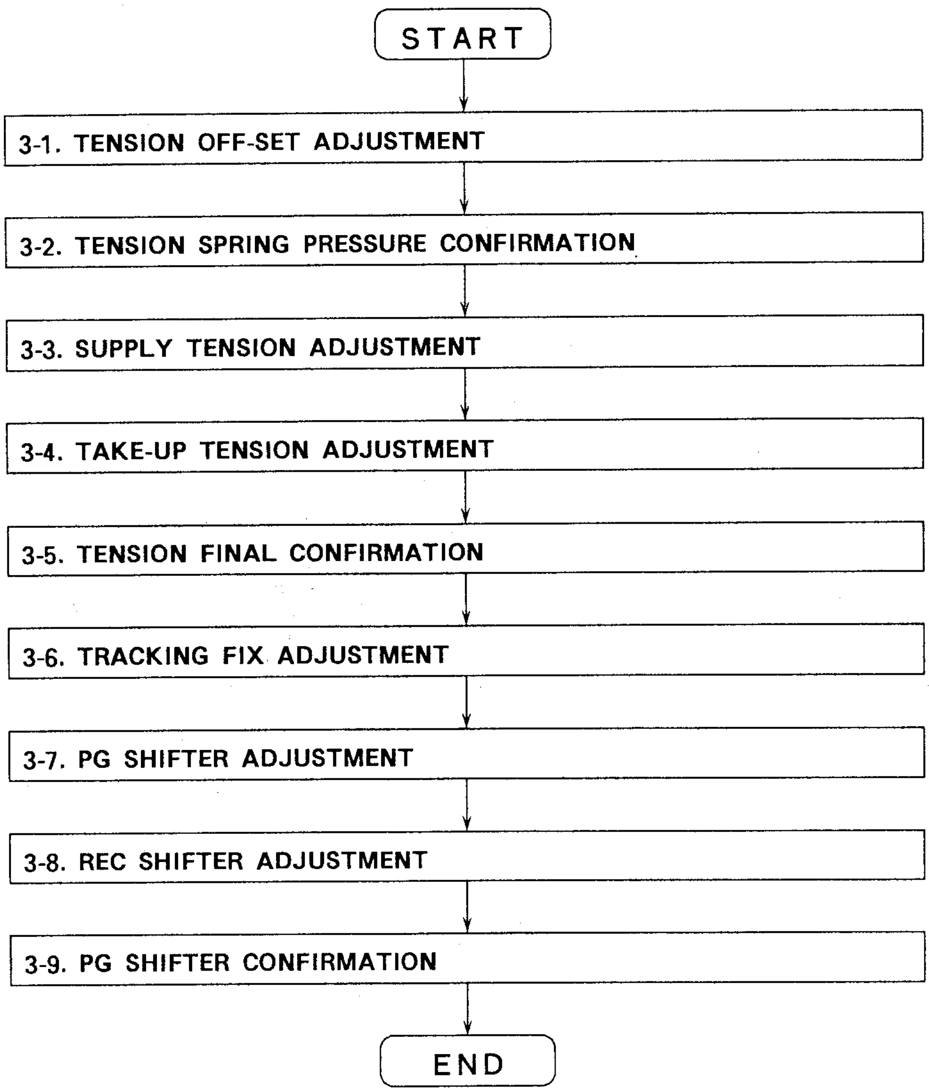
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP11 TP15 TP13	STOP	■ BLANK TAPE ☐ ALIGNMENT TAPE	DIGITAL VOLT METER	---------	VR1 (BATTERY REM.)

ADJUSTMENT PROCEDURE & SPECIFICATION	
Step 1. 1. Connect a variable DC power supply to the EXT DC INPUT and set the power select switch to the EXT. position. 2. DVM(+) → TP11(SYSCON) (-) → GND (SYSCON) 3. Adjust the D.V.M. so that the voltage becomes +12V at TP11.	TP11 = +12V
Step 2. 1. Mesure the voltage of TP15 and notate that voltage. 2. Connect the D.V.M. to TP13 and adjust VR1 so that the voltage at TP13 corresponds to the value given in the chart, for the notated voltage at TP15 for example: If the "NOTATED VOLTAGE" at TP15 +5V DC adjust VR1 for a voltage of 4.48V ± 10mV at TP13.	see chart below

TP15 (+5V SYS)	TP13
4.90V	4.39V ± 10mV
4.95V	4.44V ± 10mV
5.00V	4.48V ± 10mV
5.05V	4.53V ± 10mV
5.10V	4.57V ± 10mV
5.15V	4.62V ± 10mV
5.20V	4.66V ± 10mV

3. SERVO BOARD

SERVO SECTION FLOWCHART


START
3-1. TENSION OFF-SET ADJUSTMENT
3-2. TENSION SPRING PRESSURE CONFIRMATION
3-3. SUPPLY TENSION ADJUSTMENT
3-4. TAKE-UP TENSION ADJUSTMENT
3-5. TENSION FINAL CONFIRMATION
3-6. TRACKING FIX ADJUSTMENT
3-7. PG SHIFTER ADJUSTMENT
3-8. REC SHIFTER ADJUSTMENT
3-9. PG SHIFTER CONFIRMATION
END

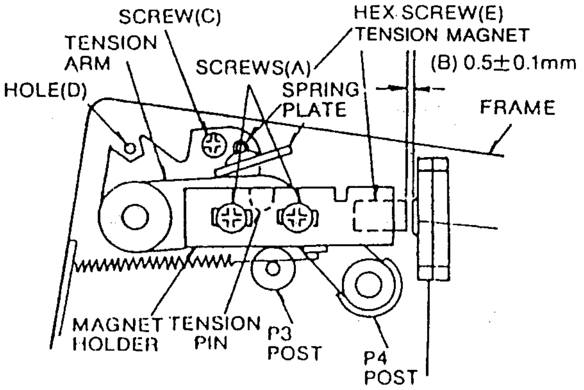
3-1. TENSION OFF SET ADJUSTMENT (SERVO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP301 (HOT) TP302 (GND)	STOP	BLANK ■ TAPE ※(EMPTY CASSETTE) ALIGNMENT ☐ TAPE	OSCILLOSCOPE DIGITAL VOLT METER	--------------	VR301 (TENSION SENSOR OFFSET)

ADJUSTMENT PROCEDURE & SPECIFICATION

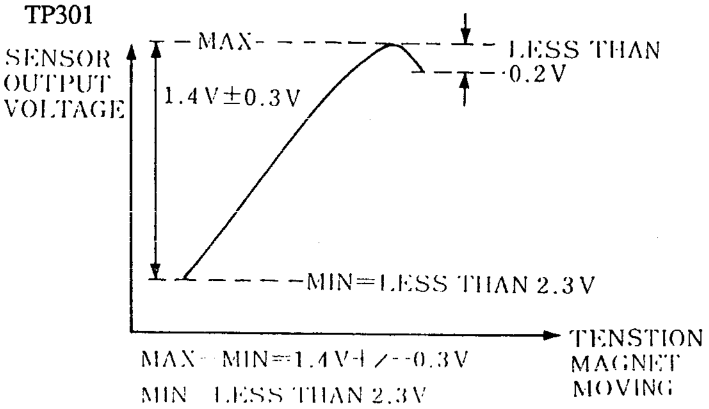
Step 1.

1. Turn the POWER SW ON and insert the empty cassette shell.
2. Remove the 2 screws (A) and remove the tension magnet.
3. Connect the D.V.M. to TP301 and confirm that the voltage at TP301(HOT)-TP302(GND)=0V(± 0.005V)
4. If it is not, adjust VR301 so that the voltage at TP301-TP302=0V (± 0.005V).



Step 2.

1. Install the tension magnet and tighten the 2 screws (A) slightly so that clearance (B) between the tension magnet and the tension sensor is about 0.5 [mm].
2. Connect the scope to TP301 and set the scope to the DC mode.
3. Slide the tension magnet from left to right and back right to left.
4. Confirm the voltage between maximum and minimum is 1.4V (± 0.3V) as shown.
5. If it is not, slightly loosen the 2 screws (A) and readjust the position of the tension magnet.
6. Repeat steps 2 ~ 5 until the relationship of the sensor output and tension magnet is as shown in step 4.



※ Note: EMPTY CASSETTE is a CASSETTE SHELL with both tape reels removes and the end of tape sensor holes "Blacked Out" with electrical tape.

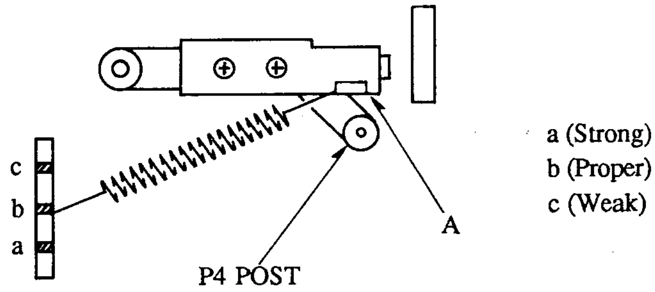
3-2. TENSION SPRING PRESSURE CONFIRMATION

(SERVO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
Tension Arm Unit	EJECT ↓ STOP	BLANK ■ TAPE ALIGNMENT ☐ TAPE	Dial Tension Gauge (VFK62)	---------	Spring Position of Tension Arm Unit

ADJUSTMENT PROCEDURE & SPECIFICATION

1. When the P4 post is moving during Loding, confirm the spring pressure is 18g ± 2g at the "A" portion as shown in figure.
2. If it is not within specification, change the position of the spring as shown.



Upper side view of P4 post unit

3-3. SUPPLY TENSION ADJUSTMENT (SERVO)

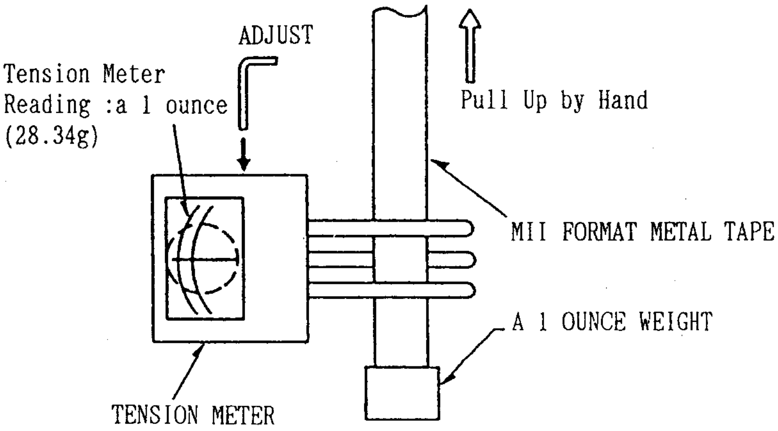
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
T3 (P5)	REC	■ BLANK TAPE (90min) ☐ ALIGNMENT TAPE	Temtelometer (VFK0312)	COMPOSITE 100% COLOUR BAR (VIDEO IN)	Tension Spring Plate

ADJUSTMENT PROCEDURE & SPECIFICATION

Step 1.

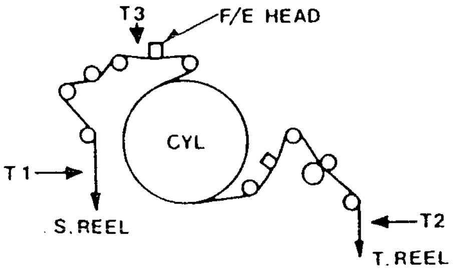
Calibration of Tentelometer

1. Before performing the tape tension adjustment. The Tension Meter should be calibrated as follows.
2. Use MII Metal Tape and a 1 ounce weight.
3. Pull up a tape by hand as shown.
4. Adjust the hex screw on the Tension Meter so that the tension meter reads 1 ounce.


ADJUST
Tension Meter
Reading :a 1 ounce
(28.34g)
Pull Up by Hand
MII FORMAT METAL TAPE
A 1 OUNCE WEIGHT
TENSION METER

Step 2.

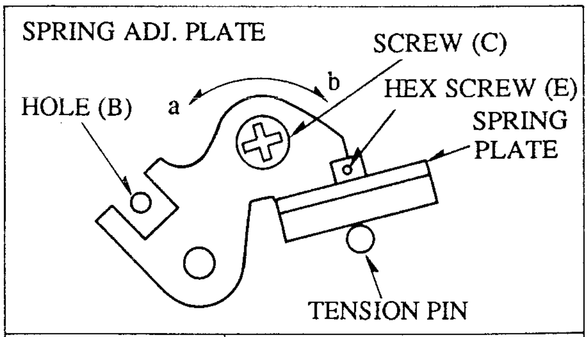
1. Insert a cassette (90min) and Shuttle to the middle-point.
2. Place the unit in the RECORDING mode and insert a tentelometer at T3 as shown in figure.


T3
F/E HEAD
CYL
T1
S.REEL
T2
T.REEL

* TOOLS REQUIRED
Eccentric Screw Driver (VFK0357)

Step 3.

1. Confirm that the meter reading is 30g ± 2g.
2. If it is not within specification, slightly loosen the screw (C) and insert the Eccentric Screwdriver into the hole (B) as shown.
3. Adjust the position of the spring plate so that the meter reading is 30g ± 2g. (For coarse Adj.)
4. Tighten the screw (C) and reconfirm that the meter reading is 30g ± 2g.
5. If it is not within specification, turn hex screw (E) so that the meter reads is 30g ± 2g. (For Fine Adj.)


SPRING ADJ. PLATE
SCREW (C)
HOLE (B)
a
b
HEX SCREW (E)
SPRING PLATE
TENSION PIN

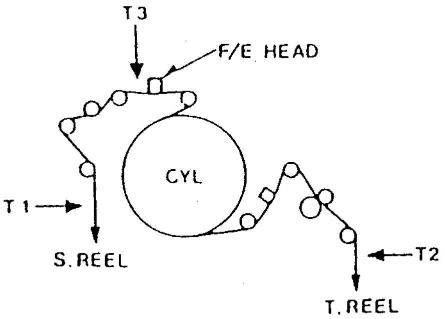
DIRECTION	TENSION
a	goes DOWN
b	goes UP

SPECIFICATION :
T3 = 30g ± 2g (REC & PLAY mode)

3-4. TAKE-UP TENSION ADJUSTMENT

(SERVO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
T2 (P11)	REC	BLANK ■ TAPE (90min) ALIGNMENT ☐ TAPE	Tentelometer (VFK0312)	COMPOSITE 100% COLOUR BAR (VIDEO IN)	VR302

ADJUSTMENT PROCEDURE & SPECIFICATION	
Step 1. 1. Insert a cassette (90min) and Shuttle to the middle-point. 2. Place the unit in the RECORDING mode and insert a tentelometer at T2 as shown.	
Step 2. 1. Confirm that the meter reading is 30g ± 5g. 2. If it is not within specification, adjust VR302 so that the meter reads 30g ± 5g.	SPECIFICATION : T2 = 30g ± 5g (REC & PLAY mode)

3-5. TENSION FINAL CONFIRMATION

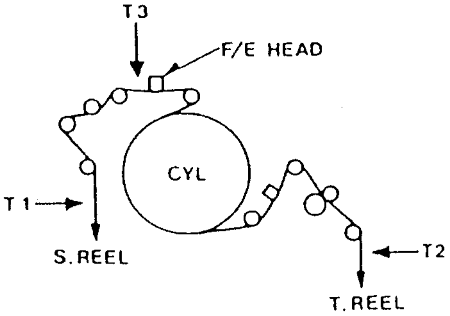
(SERVO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
T1 T2 T3	REC PLAY FF REW REV (-×5)	■ BLANK TAPE (90min) ☐ ALIGNMENT TAPE	Tentelometer (VFK0312)	COMPOSITE 100% COLOUR BAR (VIDEO IN)	-----------

ADJUSTMENT PROCEDURE & SPECIFICATION

Step 1.

1. Insert a 90min blank tape.



Step 2.

1. Confirm that the tension values are within specification in the each mode as shown in table.

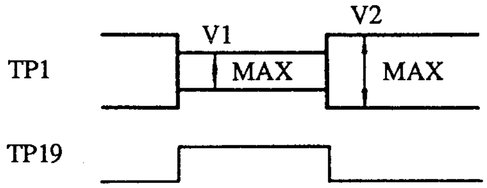
MODE	TAPE POSITION	T1	T2	T3
REC PLAY	Tape Begin	——	30^{+15}_{-10} (gr)	25 + 5 (gr)
	Tape End	——	30 ± 10 (gr)	30 ± 5 (gr)
FF	Tape Begin	10 ± 10 (gr)	25 ± 10 (gr)	——
	Tape End	10 ± 10 (gr)	25 ± 10 (gr)	——
REW	Tape Begin	25 ± 10 (gr)	10 ± 10 (gr)	——
	Tape End	25 ± 10 (gr)	10 ± 10 (gr)	——
REV (--×5)	Tape Begin	25 ± 10 (gr)	30 ± 10 (gr)	——
	Tape End	40^{+15}_{-10} (gr)	25 ± 10 (gr)	——

3-6. TRACKING FIX ADJUSTMENT

(SERVO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP 1 (on VIDEO 2 P.C.BOARD) TP19 (on SERVO P.C.BOARD)	SELF REC/PLAY	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	COMPOSITE 100% COLOUR BAR	VR1 (TRMM)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	TRACKING VR : FIXED POSITION
1. SCOPE CH 1 : TP 1 (on VIDEO 2 P.C.BOARD) SCOPE CH2 : TP19 (on SERVO P.C.BOARD) 2. Insert a Blank Tape, and place the unit in the record mode. 3. Then, playback the just recorded portion. 4. Adjust VR1 so that the V1 and V2 levels are maximized as shown.	 V1 : MAX V2 : MAX

3-7. PG SHIFTER ADJUSTMENT

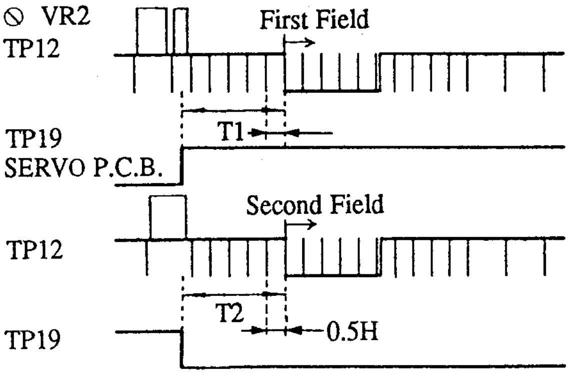
(SERVO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP12 (on VIDEO 2 P.C.BOARD) TP19 (on SERVO P.C.BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR	OSCILLOSCOPE	---------	VR2 (PG SHIFTER)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Mechanical Interchangeability adjustments should be completed. 2. Confirm TP1 (on VIDEO 2 P.C.Board) so that the RF envelope is in the maximum position. If it is not, adjust the TRACKING VR (on JACK PANEL BOARD) so that the envelope is maximized.

1. SCOPE CH 1 :
   TP12 (on VIDEO 2 P.C.BOARD)
   SCOPE CH 2 :
   TP19 (on SERVO P.C.BOARD)
2. Insert the alignment tape, and play back the 100% COLOUR BAR portion.
3. Adjust VR2 so that the T1 and T2 portions are 2.75H ± 0.1H as shown.



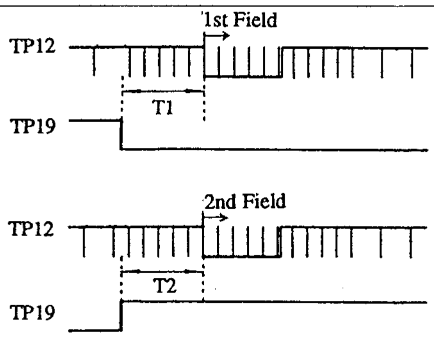
T1 = T2 = 2.75H ± 0.1H

3-8. REC SHIFTER ADJUSTMENT

(SERVO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP12 (on VIDEO 2 P.C.BOARD) TP19 (on SERVO P.C.BOARD)	REC	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPOSITE 100% COLOUR BAR	VR3 (REC SHIFTER)

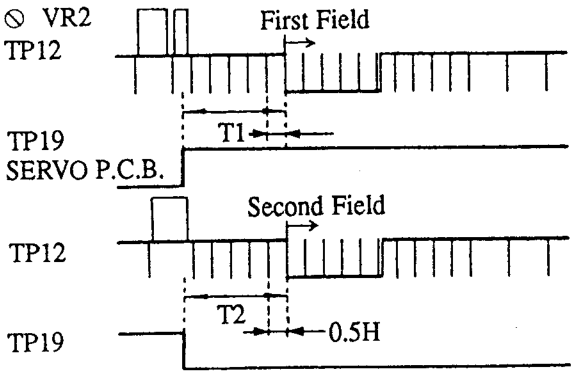
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	TRACKING VR : FIXED POSITION
1. SCOPE CH 1 : TP12 (on VIDEO 2 P.C.BOARD) SCOPE CH 2 : TP11 (on SERVO P.C.BOARD) 2. Insert a Blank Tape, and place the unit in the record mode. 3. Adjust VR3 so that the T1 and T2 portions are 2.75H ± 0.1H as shown.	 1st Field TP12 T1 TP19 2nd Field TP12 T2 TP19 T1 = T2 = 2.75H ± 0.1H

3-9. PG SHIFTER CONFIRMATION

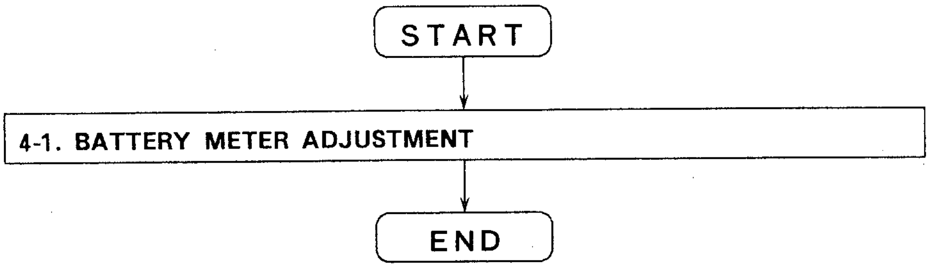
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP 2 (on VIDEO 2 P.C.BOARD) TP19 (on SERVO P.C.BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPOSITE 100% COLOUR BAR	VR2 (PG SHIFTER)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	TRACKING VR : FIXED POSITION (on JACK PANEL BOARD)
Step 1. 1. SCOPE CH1 : TP12 (on VIDEO 2 P.C.BOARD) SCOPE CH2: TP19 (on SERVO P.C.BOARD) 2. Insert a Blank Tape, and Place the unit in the record mode. 3. Then, playback the just recorded portion. 4. Confirm that the T1 and T2 portions are 2.75H ± 0.1H as shown.	 ⦸ VR2 TP12 First Field TP19 SERVO P.C.B. T1 Second Field TP12 T2 TP19 0.5H T1 = T2 = 2.75H ± 0.1H
Step 2. If it is not within specification, readjust VR2 (PG SHIFTER).	SPECIFICATION : T1 = 2.75H ± 0.1H T1 = 2.75H ± 0.1H

4. METER BOARD

METER SECTION FLOWCHART


START
4-1. BATTERY METER ADJUSTMENT
END

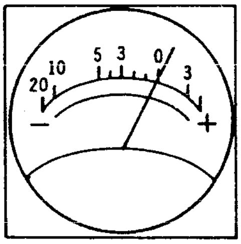
4-1. BATTERY METER ADJUSTMENT

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH4 METER (on FRONT PANEL P.C.BOARD)	EJECT	☐ BLANK TAPE ☐ ALIGNMENT TAPE	-------	---------	VR1

ADJUSTMENT PROCEDURE & SPECIFICATION

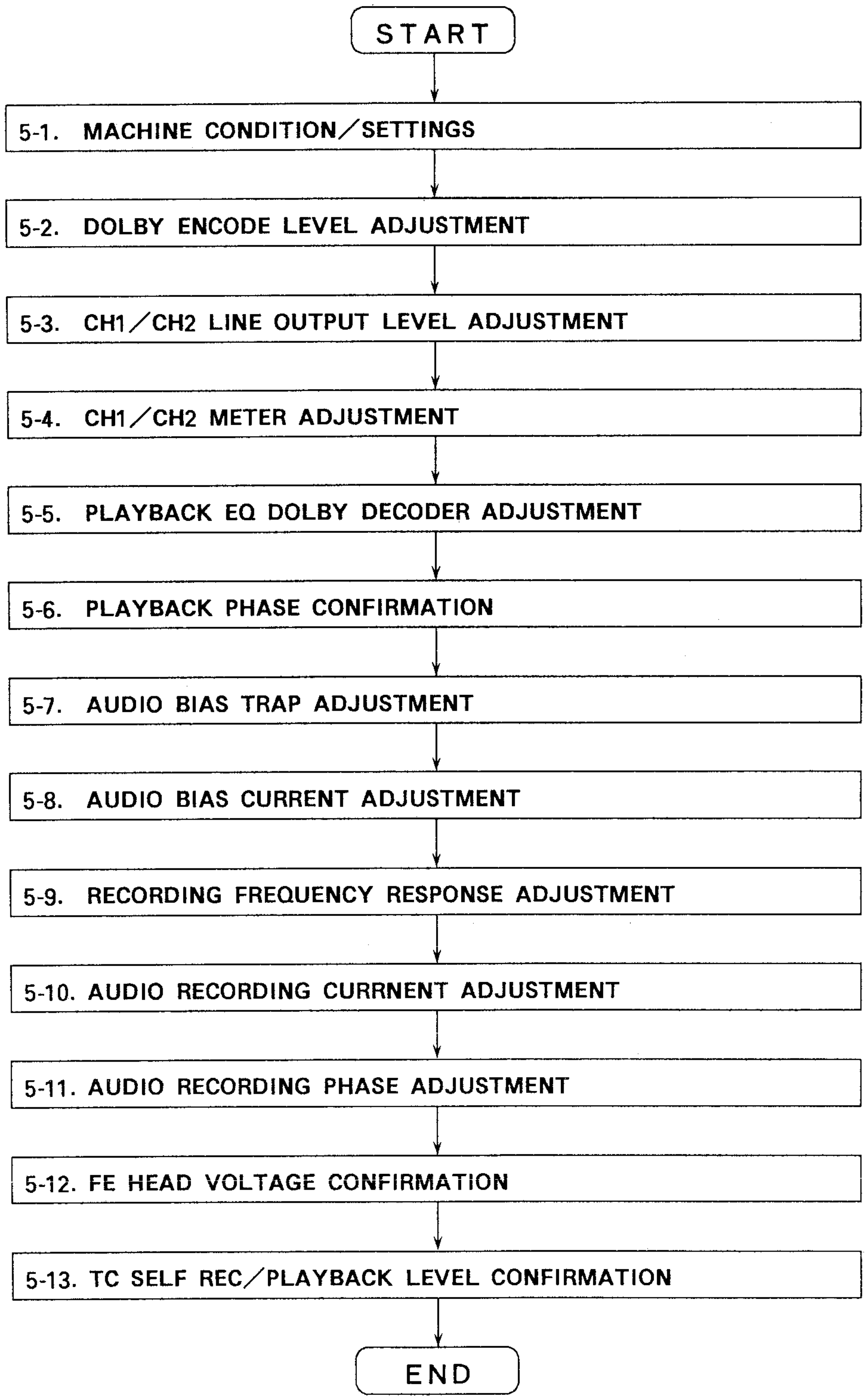
1. Connect the power supply to the VTR.
   (Supply Voltage : D.C 12V)
2. Adjust VR1 so that the pointer of METER is at the "0 VU" mark (within the blue area) as shown.

CH4 METER



5. AUDIO BOARD (1/2) -LINEAR AUDIO SECTION-

LINEAR AUDIO SECTION FLOWCHART


START
5-1. MACHINE CONDITION/SETTINGS
5-2. DOLBY ENCODE LEVEL ADJUSTMENT
5-3. CH1/CH2 LINE OUTPUT LEVEL ADJUSTMENT
5-4. CH1/CH2 METER ADJUSTMENT
5-5. PLAYBACK EQ DOLBY DECODER ADJUSTMENT
5-6. PLAYBACK PHASE CONFIRMATION
5-7. AUDIO BIAS TRAP ADJUSTMENT
5-8. AUDIO BIAS CURRENT ADJUSTMENT
5-9. RECORDING FREQUENCY RESPONSE ADJUSTMENT
5-10. AUDIO RECORDING CURRNENT ADJUSTMENT
5-11. AUDIO RECORDING PHASE ADJUSTMENT
5-12. FE HEAD VOLTAGE CONFIRMATION
5-13. TC SELF REC/PLAYBACK LEVEL CONFIRMATION
END

5-1. MACHINE CONDITION SETTING (AUDIO)

1. Set the switches on the Front Panel as shown, except when noted.

MODE	EE/PB
DOLBY NR	OFF
CH1 CH2 (AGC)	MANUAL
METER SELECT	CH4
REC/PB VR	PRESET

2. Set the switches on the Jack Panel as shown, except when noted.

VIDEO INPUT SELECT	CAMERA IN
COMPONENT/YC/COMPOSITE SELECT	COMPONENT
AUDIO INPUT CH1 TO CH4 SELECT	LINE
CH1/CH2 AUDIO INPUT LEVEL	+0dBu
AUDIO OUTPUT SELECT	LINEAR
AUDIO OUTPUT LEVEL	+0dBu
MON/CH1, CH3	CH1/3

5-2. DOLBY ENCODE LEVEL ADJUSTMENT (AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP101 (CH1) TP201 (CH2)	EJECT	BLANK ☐ TAPE	VTVM	(CAMERA IN) 50% FLAT FIELD	VR101 (CH1 ENC ADJ) VR201 (CH2 ENC ADJ)
		ALIGNMENT ☐ TAPE		(AUDIO IN) 1KHz SINEWAVE SIGNAL AT +0dBu TO CH1 AND CH2 INPUTS	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 5-1.
1. Adjust VR101 (CH1) so that the level is -10dBu ± 0.1dBu. 2. Adjust VR201 (CH2) so taht the level is -10dBu ± 0.1dBu.	SPEC. : -10dBu ± 0.1dBu

5-3. CH1/CH2 LINE OUTPUT LEVEL ADJUSTMENT

(AUDIO)

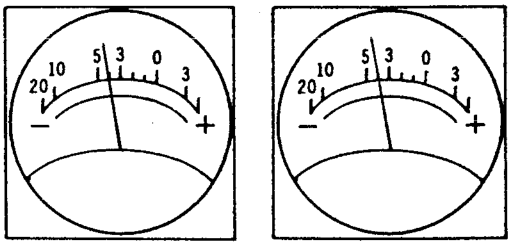
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH1 LINE OUT CH2 LINE OUT (on JACK PANEL BOARD)	EJECT	BLANK ☐ TAPE	VTVM	(CAMERA IN) 50% FLAT FIELD	VR303 (CH1 LINE OUT LEVEL) VR403 (CH2 LINE OUT LEVEL)
		ALIGNMENT ☐ TAPE		(AUDIO IN) 1KHz SINEWAVE SIGNAL AT +0dBu TO CH1 AND CH2 INPUTS	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 5-1.
VTVM : CH1 LINE OUT CH2 LINE OUT	SPEC. : +0dBu ± 0.1dBu

5-4. CH1/CH2 METER ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH1 METER CH2 METER (on FRONT PANEL BOARD)	EJECT	BLANK ☐ TAPE	---------	(CAMERA IN) 50% FLAT FIELD	VR304 (MET ADJ) VR404 (MET ADJ)
		ALIGNMENT ☐ TAPE		(AUDIO IN) 1KHz SINEWAVE SIGNAL AT +0dBu TO CH1 AND CH2 INPUTS	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 5-1.
1. Adjust VR304 so that the CH1 meter indicates -4VU. 2. Adjust VR404 so taht the CH2 meter indicates -4VU.	

5-5. PLAYBACK EQ DOLBY DECODE ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH1 LINE OUT CH2 LINE OUT (on JACK PANEL BOARD)	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE FREQUENCY RESPONSE ADJ.PORTION	VTVM	---------	VR301 (CH1 PB EQ) VR401 (CH2 PB EQ)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 5-1.

1. Insert the alignment tape, and play back the FREQUENCY RESPONSE ADJ. portion.
2. Adjust VR301 (CH1) and VR401 (CH2) as shown.

Frequency	Specification
1KHz	0dB (Reference)
10KHz	+0.5dB / -0.5dB

5-6. PLAYBACK PHASE CONFIRMATION

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH1 METER CH2 METER (on JACK PANEL BOARD)	PLAY	☐ BLANK TAPE	OSCILLOSCOPE	---------	A/C HEAD AZIMUTH ADJUSTMENT (MECHANICAL)
		■ ALIGNMENT TAPE AUDIO 15KHz PORTION			

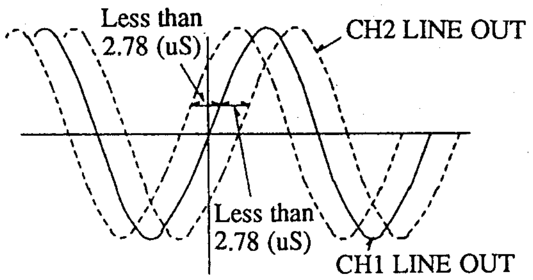
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

1. Refer to the SECTION 5-1.
2. The PLAYBACK EQ ADJ. (5-5) should be completed.

Step 1.

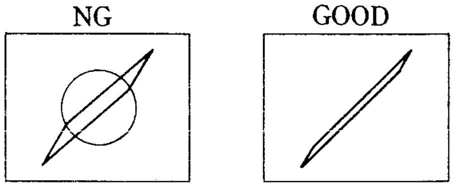
1. SCOPE CH1 : CH1 LINE OUT
   SCOPE CH2 : CH2 LINE OUT
2. Play back the 15KHz portion of the Alignment Tape.
3. Confirm that the phase difference is 0μs ± 2.78μs (0 degree ± 15 degree).
4. If it is not within specification, readjust the A/C Head Azimuth Mechanically (Refer to Mech・Adj. section).



SPECIFICATION :
0 degree ± 15 degree at 15KHz Sinewave Signal
(0μs ± 2.78μs)

※ ALTERNATE METHOD:

1. CONNECT CH1 LINE OUT → SCOPE CH1
   CONNECT CH2 LINE OUT → SCOPE CH2
2. Set SCOPE to X-Y (Fixed) position.
3. Confirm the lissajour waveform.



Step 2.

1. When this adjustment is performed, reconfirm the PLAYBACK EQ ADJ. (5-5).

5-7. AUDIO BIAS TRAP ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP102 (CH1) TP202 (CH2) TP901 (TC)	REC	BLANK ■ TAPE	OSCILLOSCOPE	(CAMERA IN) 50% FLAT FIELD	FL102 (CH1 BIAS TRAP) FL202 (CH2 BIAS TRAP) FL901 (TC BIAS TRAP)
		ALIGNMENT ☐ TAPE		(AUDIO IN) NO SIGNAL	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 5-1.
1. Insert the Blank Tape and place the unit in the RECORD mode. 2. SCOPE : TP102 TP202 TP901	
TP102 = Minimize the Amplitude of Bias frequency component.	FL102
TP202 = Minimize the Amplitude of Bias frequency component.	FL202
TP901 = Minimize the Amplitude of Bias frequency component.	FL901

5-8. AUDIO BIAS CURRENT ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
AUDIO CH1 LINE OUT CH2 LINE OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	VTVM	(CAMERA IN) 50% FLAT FIELD (AUDIO IN) 10KHz SINEWAVE SIGNAL AT +0dBu (CH1/CH2)	VC501 (CH1 BIAS CURR.) VC502 (CH2 BIAS CURR.)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 5-1. 2. AUDIO IN CH1/CH2 : LINE IN

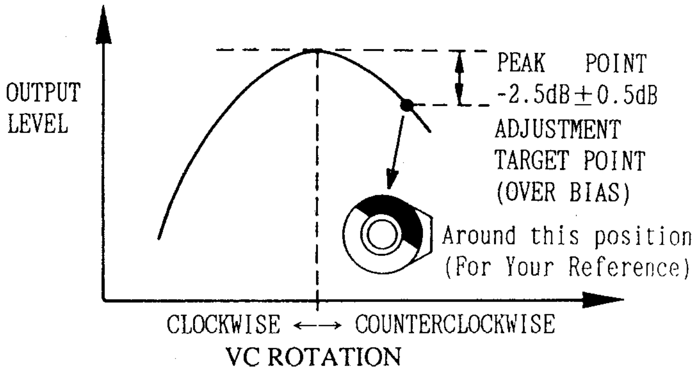
Step 1.

1. Place the unit in the record mode.
2. Turn VC501 (CH1) from "A" position through "B" and "C" position to "D" position slowly while in the recording.
3. VTVM : CH1 AUDIO LINE OUT
4. Play back the just recorded portion.
5. Confirm the Audio level to change.
6. Find the audio peak level and notate.
7. Set VC501 to this position. (Usually is nearly "D" position as shown.)

Step 2.

1. Place the unit in the record mode again.
2. Playback the just recorded portion.
3. Confirm that the audio output level is within -2.5dB ± 0.5dB (Bias Saturation point) from the Audio Peak level.
4. If it is not within specification, repeat from Steps 2-1 and 2-3 until the Audio Bias is -2.5dB ± 0.5dB from the Audio Peak level.

⊘ VC501
⊘ VC502



5-9. RECORDING FREQUENCY RESPONSE ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH1 LINE OUT CH2 LINE OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	VTVM	(CAMERA IN) 50% FLAT FIELD (AUDIO IN) 1KHz ~ 15KHz SINEWAVE SIGNAL AT -10dBu (CH1/CH2)	SW101 (CH1) SW201 (CH2)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 5-1. 2. The AUDIO BIAS CURRENT ADJ. (Section 5-8) should be completed before this adjustment is done.

Step 1.

1. Supply a 1KHz sinewave signal at -6dBu to the CH1 and CH2 LINE inputs.
2. Insert a Blank Tape and place the unit in the record mode.
3. Preset SW101 and SW201 as shown.

SW101 - 1 : ON
- 2 : OFF
- 3 : ON
- 4 : OFF

SW201 - 1 : ON
- 2 : OFF
- 3 : ON
- 4 : OFF

Step 2.

1. During the recording change the Audio Frequency from 1KHz to 15KHz.
2. Playback the just recorded portion and confirm that the output levels are within specification.

SPECIFICATION : 1KHz = Reference (0dB)

1KHz ~ 7.5KHz = ± 1dB
7.5KHz ~ 15KHz = +1.5/-2.5dB

Step 3.

1. If it is not within specification, adjust SW101 and SW201 according to the table.
2. Repeat from Steps 3-1 and 3-2 until the output level is within specification.

		Hi level case	Low level case
5KHz portion	CH1	SW101-1 : OFF	SW101-2 : ON
	CH2	SW201-1 : OFF	SW201-2 : ON
10KHz portion	CH1	SW101-3 : OFF	SW101-4 : ON
	CH2	SW201-3 : OFF	SW201-4 : ON

5-10. AUDIO RECORDING CURRENT ADJUSTMENT

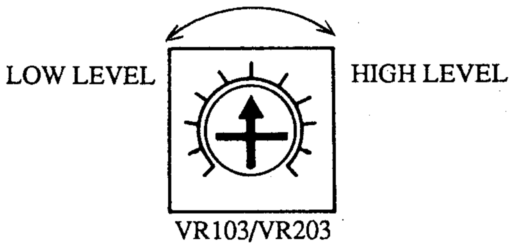
(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH1 LINE OUT CH2 LINE OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE	VTVM	(CAMERA IN) 50% FLAT FIELD	VR103 (CH1 REC CURR.) VR203 (CH2 REC CURR.)
		ALIGNMENT ☐ TAPE		(AUDIO IN) 1KHz SINEWAVE SIGNAL AT +0dBu (CH1/CH2)	

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 5-1.

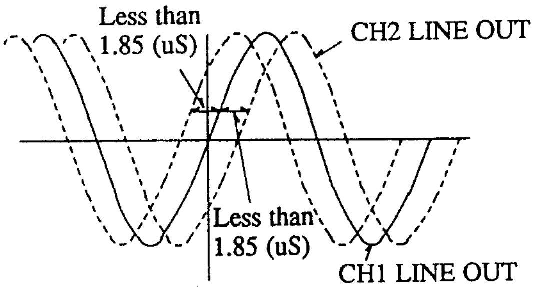
1. VTVM : CH1 LINE OUT
   CH2 LINE OUT
2. Make a recording.
3. Playback the just recorded portion, and confirm that the output level is +0dBu ± 0.3dBu.
4. If it is not within specification, adjust VR103 (CH1) and VR203 (CH2).
5. Repeat the Steps 2 and 3 until the output level is +0dBu ± 0.3dBu.



5-11. AUDIO RECORDING PHASE ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH1 LINE OUT CH2 LINE OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE	OSCILLOSCOPE	(CAMERA IN) 50% FLAT FIELD	VR202 (REC PHASE)
		ALIGNMENT ☐ TAPE		(AUDIO IN) 10KHz SINEWAVE SIGNAL AT +0dBu (CH1/CH2)	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 5-1.
1. SCOPE CH1 : CH1 LINE OUT SCOPE CH2 : CH2 LINE OUT 2. Make a recording. 3. Play back the just recorded portion. 4. Confirm that the phase difference is 0 degree ± 10 degree (0μs ± 1.85μs). 5. If it is not, adjust VR202 and repeat from Item 2 to Item 4 until the phase difference becomes 0 degree ± 10 degree (0μs ± 1.85μs). ※ See PARAGRAPH 5-6 for ALTERNATE METHOD.	 Less than 1.85 (uS) CH2 LINE OUT Less than 1.85 (uS) CH1 LINE OUT

5-12. FE HEAD VOLTAGE CONFIRMATION

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
FE HEAD TERMINAL (Red cable side)	REC	■ BLANK TAPE	OSCILLOSCOPE	(CAMERA IN) 50% FLAT FIELD	----------
		☐ ALIGNMENT TAPE		(AUDIO IN) NO SIGNAL	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 5-1.
1. Insert a Blank Tape, and place the unit in the record mode. 2. SCOPE : Red Cable side of FE HEAD 3. Confirm that the FE HEAD voltage is more than 750mVp-p.	SPECIFICATION : FE HEAD Voltage = more than 750mVp-p

5-13. TC SELF REC/PB LEVEL CONFIRMATION

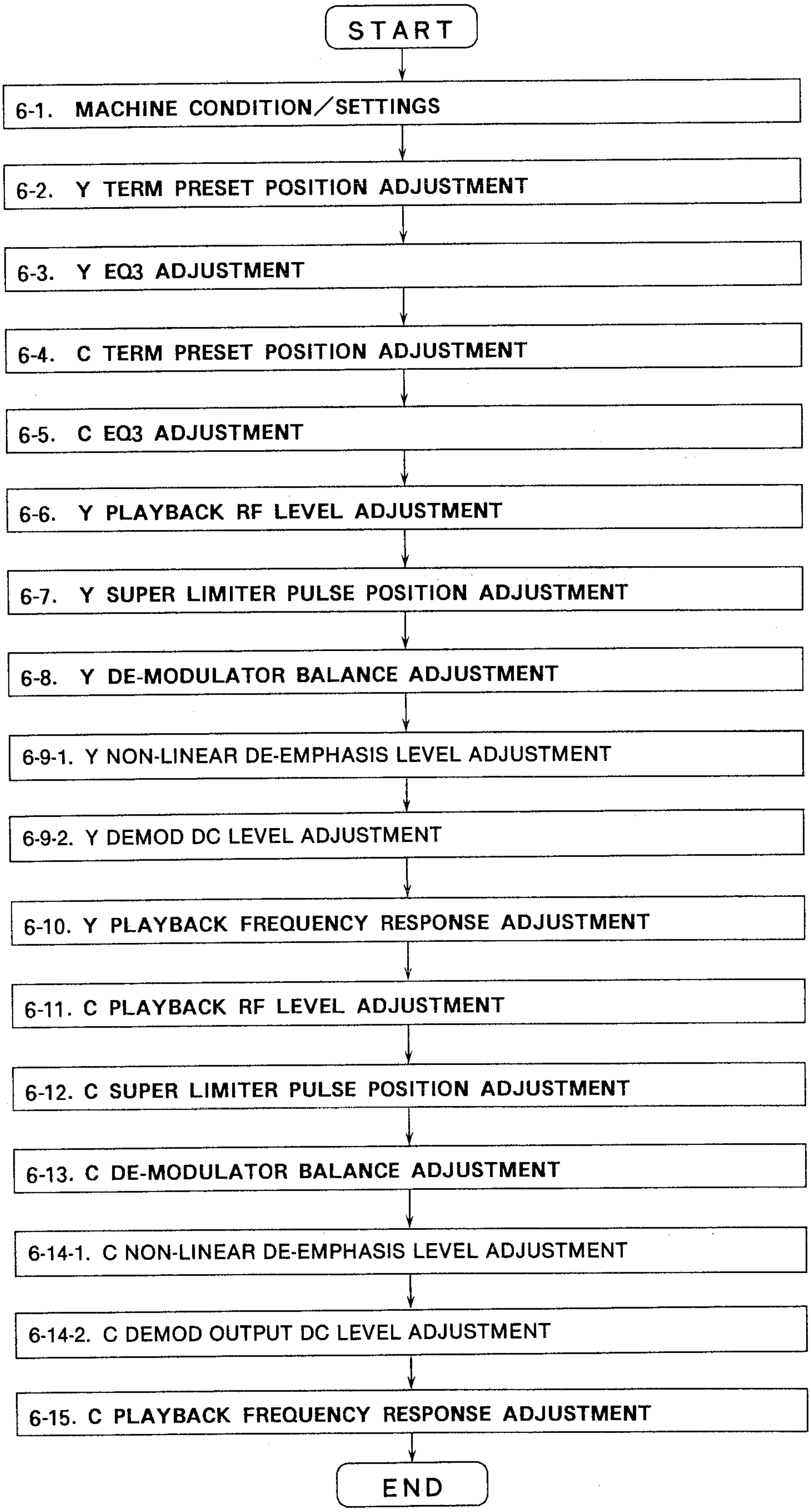
(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP902	SELF REC/PB	■ BLANK TAPE	OSCILLOSCOPE	(CAMERA IN) 50% FLAT FIELD	-----------
		☐ ALIGNMENT TAPE		(AUDIO IN) NO SIGNAL	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 5-1.
Step 1. 1. Insert a Blank Tape, and make a record. 2. Then play back the just recorded portion. 3. Confirm that the TC level is 400mVp-p ± 150mVp-p.	SPECIFICATION : TC level = 400mVp-p ± 150mVp-p
Step 2. 1. If it is not within specification, check the head to tape contact. 2. Gently pull up the tapes lower edge from the bottom at A/C Head entrance side. 3. If the TC level increases, it is nessesary to the A/C Head Mechanical Adjustment. (Refer to the Mechanical Adjustments section.)	

6. VIDEO 2 BOARD

VIDEO 2 SECTION FLOWCHART


START
6-1. MACHINE CONDITION／SETTINGS
6-2. Y TERM PRESET POSITION ADJUSTMENT
6-3. Y EQ3 ADJUSTMENT
6-4. C TERM PRESET POSITION ADJUSTMENT
6-5. C EQ3 ADJUSTMENT
6-6. Y PLAYBACK RF LEVEL ADJUSTMENT
6-7. Y SUPER LIMITER PULSE POSITION ADJUSTMENT
6-8. Y DE-MODULATOR BALANCE ADJUSTMENT
6-9-1. Y NON-LINEAR DE-EMPHASIS LEVEL ADJUSTMENT
6-9-2. Y DEMOD DC LEVEL ADJUSTMENT
6-10. Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT
6-11. C PLAYBACK RF LEVEL ADJUSTMENT
6-12. C SUPER LIMITER PULSE POSITION ADJUSTMENT
6-13. C DE-MODULATOR BALANCE ADJUSTMENT
6-14-1. C NON-LINEAR DE-EMPHASIS LEVEL ADJUSTMENT
6-14-2. C DEMOD OUTPUT DC LEVEL ADJUSTMENT
6-15. C PLAYBACK FREQUENCY RESPONSE ADJUSTMENT
END

6-1. MACHINE CONDITION SETTING

Set the switches on the Front Panel as shown, unless specified.

TRACKING VR -- FIXED POSITION
MODE -- FE/PB

6-2. Y TERM PRESET POSITION ADJUSTMENT

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP 3 TP 6	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE SWEEP PORTION	OSCILLOSCOPE	---------	VR5 (Y TEARM)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 6-1.
1. SCOPE CH1 : TP3 SCOPE CH2 : TP6 (For Trigger) 2. Playback the SWEEP portion of the Alignment tape. 3. Turn the volume VR5 and measure the maximum level (A) of RF amplitude. Note down (A). 4. Turn the volume VR5 and measure the minimum level (B) of RF amplitude. Note down (B). 5. Adjust VR5 so that RF level is approximate [(A) + (B)]/2.	

6-3. Y EQ3 ADJUSTMENT

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP 3 TP 6	PLAY	BLANK ☐ TAPE	OSCILLOSCOPE	---------	VR8 (Y EQ3)
		ALIGNMENT ■ TAPE SWEEP PORTION			

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 6-1.
1. SCOPE CH1 : TP3 SCOPE CH2 : TP6 (For Trigger) 2. Playback the SWEEP portion of the Alignment tape. 3. Turn the volume VR8 and measure the maximum level (A) of RF amplitude near 11MHz. Note down (A). 4. Turn the volume VR8 and measure the minimum level (B) of RF amplitude near 11MHz. Note down (B). 5. Adjust VR8 so that RF level near 11MHz is approximate [(A) + (B)]/2.	

6-4. C TERM PRESET POSITION ADJUSTMENT

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP15 TP18	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE SWEEP PORTION	OSCILLOSCOPE	---------	VR21(C TEARM)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 6-1.
1. SCOPE CH1 : TP15 SCOPE CH2 : TP18 (For Trigger) 2. Playback the SWEEP portion of the Alignment tape. 3. Turn the volume VR21 and measure the maximum level (A) of RF amplitude. Note down (A). 4. Turn the volume VR21 and measure the minimum level (B) of RF amplitude. Note down (B). 5. Adjust VR21 so that RF level is approximate [(A) + (B)]/2.	

6-5. C EQ3 ADJUSTMENT

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP15 TP18	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE SWEEP PORTION	OSCILLOSCOPE	---------	VR24 (C EQ3)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 6-1.
1. SCOPE CH1 : TP15 SCOPE CH2 : TP18 (For Trigger) 2. Playback the SWEEP portion of the Alignment tape. 3. Turn the volume VR24 so that RF amplitude near 8MHz becomes minimum.	

6-6. Y PLAYBACK RF LEVEL ADJUSTMENT

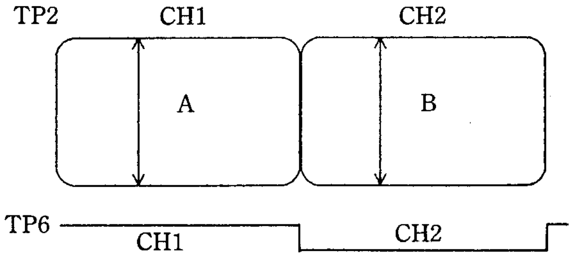
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP2 (on VIDEO 2 P.C.BOARD) TP6	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	-----------	VR1 (Y RF LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

1. SCOPE CH1 : TP2
   SCOPE CH2 : TP6 (For Trigger)
2. Playback the 100% COLOUR BAR portion of the Alignment tape.
3. Adjust VR1 so that the RF level is 300mVp-p ± 50mVp-p as shown in figure.



A = B = 300mVp-p ± 50mVp-p

6-7. Y SUPER LIMITER PULSE POSITION ADJUSTMENT

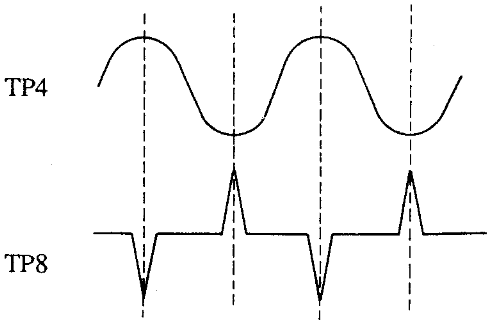
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP4 TP8	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	COMPONENT 50% WHITE	VC1 (Y S.L POS)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

1. Insert a Blank Tape, and place the unit in the record mode.
2. Playback the just recorded portion.
3. SCOPE CH1 : TP4 (Y RF)
   SCOPE CH2 : TP8 (Y SL PULSE)
4. Adjust VC1 so that the Y super Limiter pulse at TP8 is located at the Y RF peak as shown.



SCOPE TIME/DIV. : 50 [ns/TIME]

6-8. Y DE-MODULATOR BALANCE ADJUSTMENT

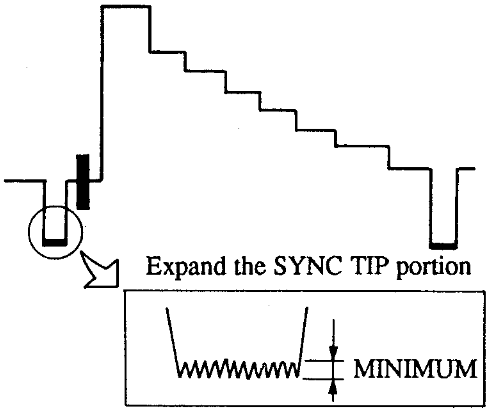
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP9	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	---------	VR11 (Y DEMOD BAL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

1. SCOPE : TP9
2. Playback the 100% COLOUR BAR portion of the Alignment tape.
3. Adjust VR11 so that the noise is nulled at the sync tip as shown.



6-9-1. Y NON-LINEAR DE-EMPHASIS LEVEL ADJUSTMENT

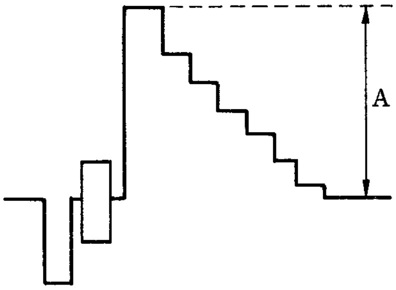
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP9	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	-----------	VR13 (Y NL DE LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

1. SCOPE : TP9
2. Playback the 100% COLOUR BAR portion of the Alignment tape.
3. Adjust VR13 so that the (A) level is 1.1Vp-p ± 0.02Vp-p as shown in figure.



A = 1.1Vp-p ± 0.02Vp-p

6-9-2. Y DEMOD OUTPUT DC LEVEL ADJUSTMENT

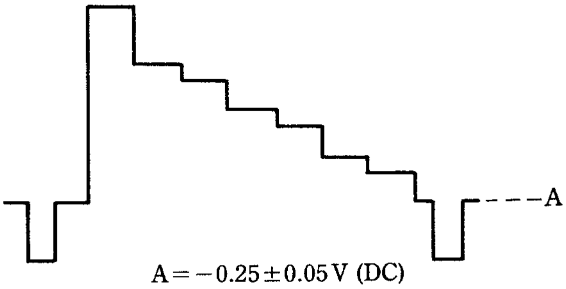
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP12	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	-----------	VR12 (Y DC)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

1. SCOPE : TP12
2. Playback the 100% COLOUR BAR portion of the Alignment tape.
3. Adjust VR12 so that the pedestal level is DC -0.25 ± 0.05V.



A=−0.25±0.05V (DC)

6-10. Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

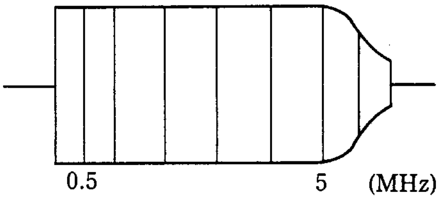
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP9 TP6	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE SWEEP PORTION	WAVEFORM MONITOR OR OSCILLOSCOPE	-----------	VR6 (Y CH1 EQ2) VR7 (Y CH2 EQ2)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

1. SCOPE CH1 : TP9
   SCOPE CH2 : TP6 (For Trigger)
2. Playback the SWEEP portion of the Alignment tape.
3. Adjust VR6 (CH1) so that the frequency response is as shown.
4. Adjust VR7 (CH2) so that the frequency response is as shown.



SPECIFICATION :
0.5MHz : 5.0MHz = 100% : 95% ± 10%

6-11. C PLAYBACK RF LEVEL ADJUSTMENT

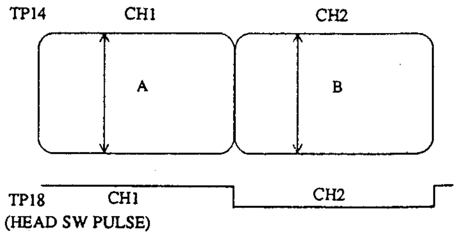
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP14 TP18	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	---------	VR20 (C RF LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

1. SCOPE CH1 : TP14
   SCOPE CH2 : TP18 (For Trigger)
2. Playback the 100% COLOUR BAR of the Alignment tape.
3. Adjust VR20 so that the C RF level is 300mVp-p ± 50mVp-p as shown.



A = B = 300mVp-p ± 50mVp-p

6-12. C SUPER LIMITER PULSE POSITION ADJUSTMENT

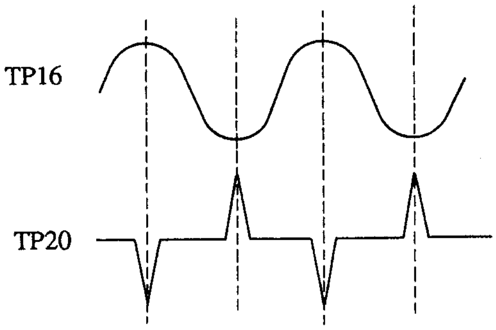
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP16 TP20	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	COMPONENT 50% WHITE	VC2 (C S.L POS)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

1. Insert a Blank Tape, and place the unit in the record mode.
2. Playback the just recorded portion.
3. SCOPE CH1 : TP16 (C RF)
   SCOPE CH2 : TP20 (C SL PULSE)
4. Adjust VC2 so that the C Super Limiter pulse at TP16 is located at the C RF peak as shown.



SCOPE TIME/DIV. : 50 [ns/TIME]

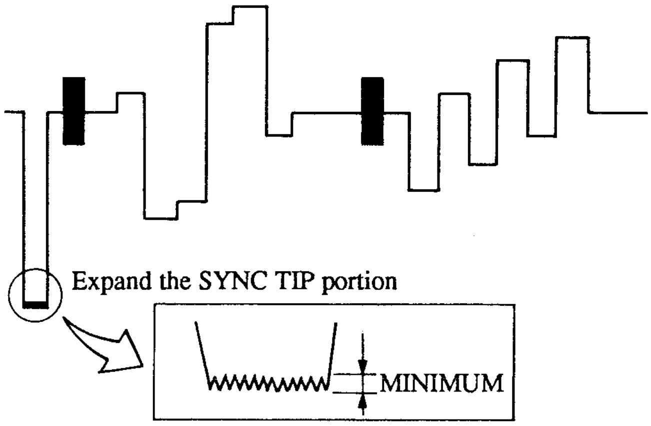
6-13. C DE-MODULATOR BALANCE ADJUSTMENT

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP21	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	---------	VR27 (C DEMOD BAL)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 6-1.

1. SCOPE : TP21
2. Playback the 100% COLOUR BAR portion of the Alignment tape.
3. Adjust VR27 so that the noise is nulled at the sync tip as shown.



6-14-1. C NON-LINEAR DE-EMPHASIS LEVEL ADJUSTMENT

(VIDEO 2)

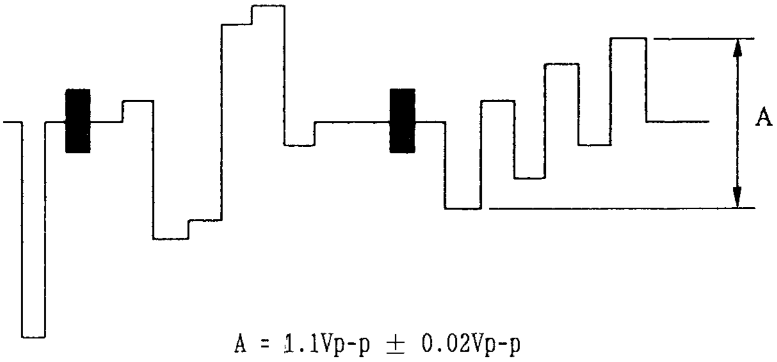
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP21	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	-----------	VR29 (C NL DE LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.

Step 1.

1. SCOPE : TP21
2. Playback the 100% COLOUR BAR portion of the Alignment tape.
3. Adjust VR29 so that the (A) level is 1.1Vp-p ± 0.02Vp-p as shown.

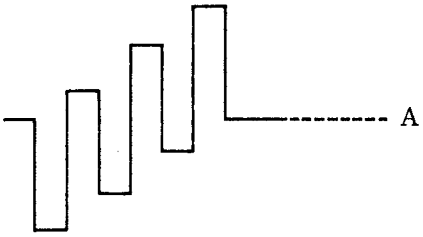


A = 1.1Vp-p ± 0.02Vp-p

6-14-2. C DEMOD OUTPUT DC LEVEL ADJUSTMENT

(VIDEO 2)

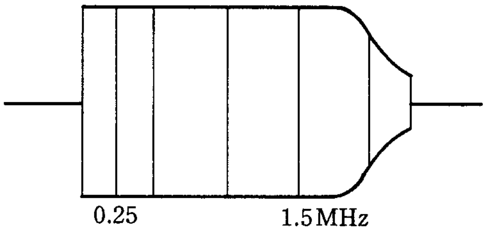
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP23	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	-----------	VR28 (C DC)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 6-1.
1. SCOPE : TP23 2. Playback the 100% COLOUR BAR portion of the Alignment tape. 3. AdjustVR28 so that the blanking DC level is DC 0 ± 0.1V.	 A = 0 ± 0.1V (DC)

6-15. C PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

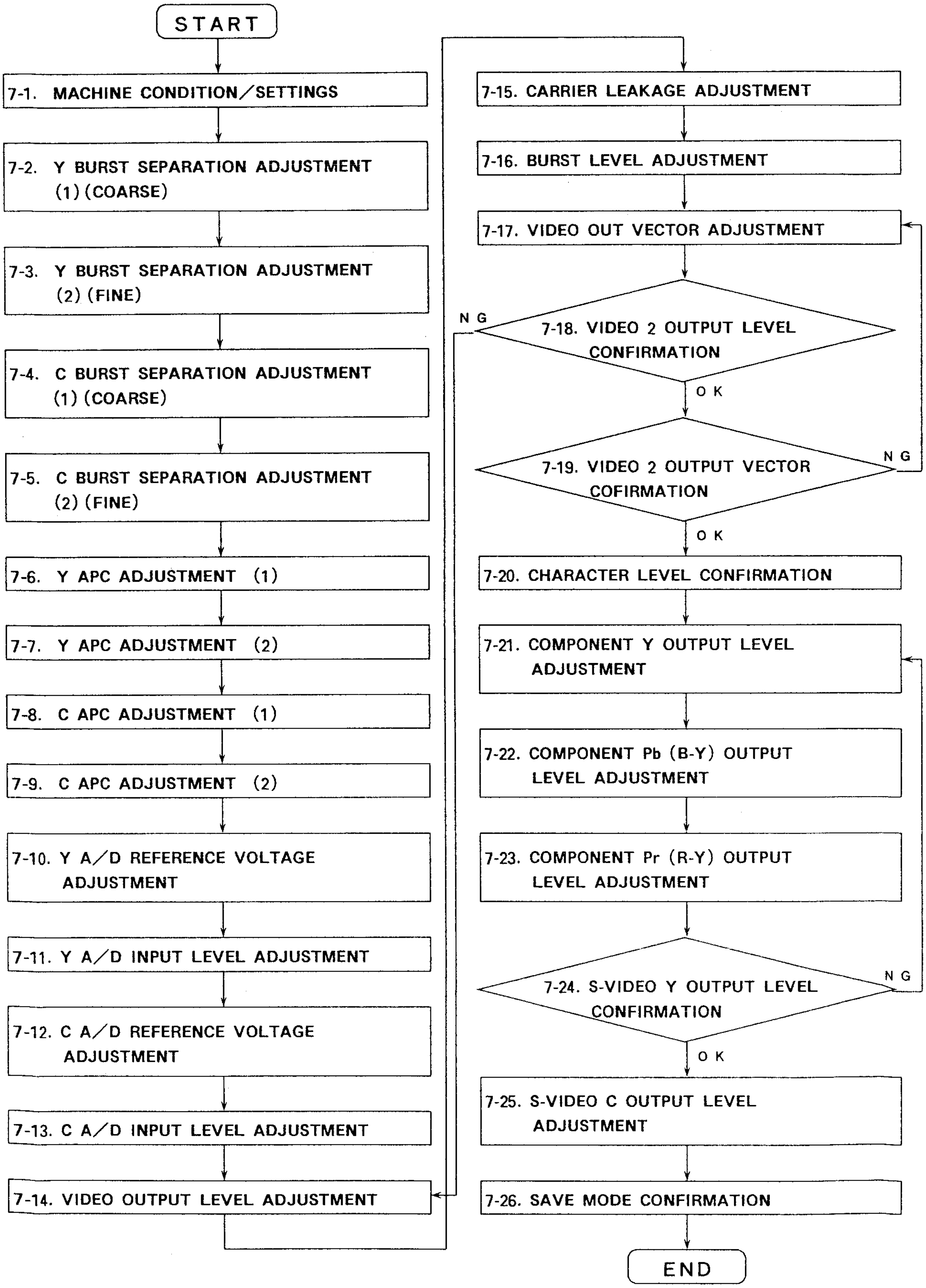
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP21 TP18	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE SWEEP PORTION	OSCILLOSCOPE	---------	VR22 (C CH1 EQ2) VR23 (C CH2 EQ2)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 6-1.
Step 1. 1. SCOPE CH1 : TP21 SCOPE CH2 : TP18 (For Trigger) 2. Play back the SWEEP portion of the Alignment tape. 3. Adjust VR22 (CH1) so that the frequency response is as shown. 4. Adjust VR23 (CH2) so that the frequency response is as shown.	 SPECIFICATION : 0.25MHz : 1.5MHz = 100% : 95% ± 10%

7. VIDEO 3 AND VIDEO 4 BOARD (1/2)

VIDEO 3 AND VIDEO 4 (1/2) SECTION FLOWCHART


START
7-1. MACHINE CONDITION/SETTINGS
7-2. Y BURST SEPARATION ADJUSTMENT (1) (COARSE)
7-3. Y BURST SEPARATION ADJUSTMENT (2) (FINE)
7-4. C BURST SEPARATION ADJUSTMENT (1) (COARSE)
7-5. C BURST SEPARATION ADJUSTMENT (2) (FINE)
7-6. Y APC ADJUSTMENT (1)
7-7. Y APC ADJUSTMENT (2)
7-8. C APC ADJUSTMENT (1)
7-9. C APC ADJUSTMENT (2)
7-10. Y A/D REFERENCE VOLTAGE ADJUSTMENT
7-11. Y A/D INPUT LEVEL ADJUSTMENT
7-12. C A/D REFERENCE VOLTAGE ADJUSTMENT
7-13. C A/D INPUT LEVEL ADJUSTMENT
7-14. VIDEO OUTPUT LEVEL ADJUSTMENT
7-15. CARRIER LEAKAGE ADJUSTMENT
7-16. BURST LEVEL ADJUSTMENT
7-17. VIDEO OUT VECTOR ADJUSTMENT
N G
7-18. VIDEO 2 OUTPUT LEVEL CONFIRMATION
O K
N G
7-19. VIDEO 2 OUTPUT VECTOR COFIRMATION
O K
7-20. CHARACTER LEVEL CONFIRMATION
7-21. COMPONENT Y OUTPUT LEVEL ADJUSTMENT
7-22. COMPONENT Pb (B-Y) OUTPUT LEVEL ADJUSTMENT
7-23. COMPONENT Pr (R-Y) OUTPUT LEVEL ADJUSTMENT
N G
7-24. S-VIDEO Y OUTPUT LEVEL CONFIRMATION
O K
7-25. S-VIDEO C OUTPUT LEVEL ADJUSTMENT
7-26. SAVE MODE CONFIRMATION
END

7-1. MACHINE CONDITION SETTING

Set the switches on the FRONT PANEL as follows, unless specified.

MODE -- FE/PB
METER SELECT -- VIDEO・TRACKING

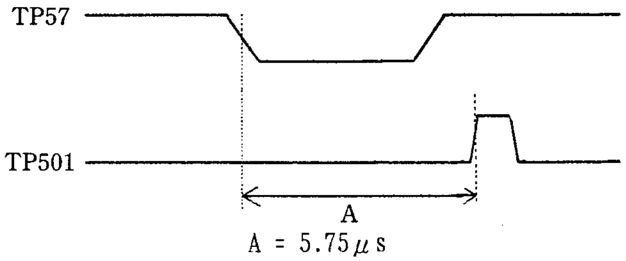
Set the switches on the JACK PANEL as follows, unless specified.

VIDEO INPUT SELECT ------------------------------------- VIDEO IN
TRACKING VR ------------------------------------- FIXED POSITION

7-2. Y BURST SEPARATION ADJUSTMENT
(1) (COARSE)

(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP57 TP501	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR401 (Y SYNC PHASE)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.
Step 1. 1. SCOPE CH1 : TP57 SCOPE CH2 : TP501 2. SCOPE SETTING : DELAY mode 3. Adjust VR401 so that the pulse period (A) is 5.75µs as shown.	
Step 2. 1. After this adjustment the Y BURST SEPARATION ADJ. (2) is required.	

7-3. Y BURST SEPARATION ADJUSTMENT (2) (FINE)

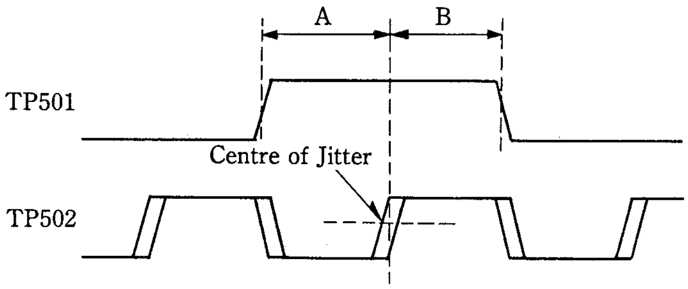
(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP501 TP502	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR401 (Y SYNC PHASE)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 7-1. 2. Y BURST SEPARATION ADJ. (1)(7-2) should be completed before this adjustment is done.

1. SCOPE CH1 : TP501
   SCOPE CH2 : TP502
2. SCOPE SETTING : DELAY mode
3. Adjust VR401 so that the pulse position of TP502 is as shown.

Note:
When the pulses at TP501 and TP502 are being adjust, observe the centre of jitter of TP502 as shown.

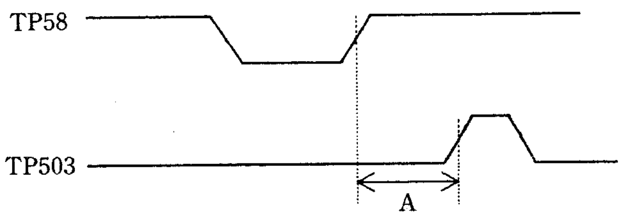


A = B ± 10%

7-4. C BURST SEPARATION ADJUSTMENT (1) (COARSE)

(VIDEO 4)

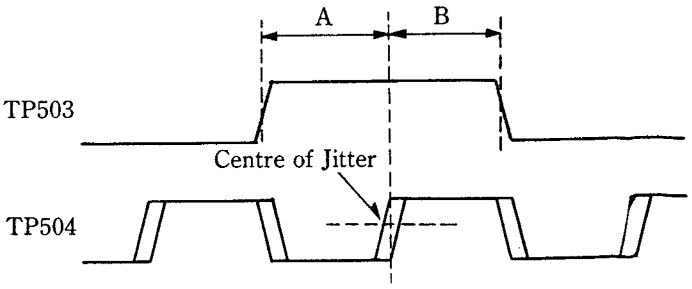
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP58 TP503	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR501 (C SYNC PHASE)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.
Step 1. 1. SCOPE CH1 : TP58 SCOPE CH2 : TP503 2. SCOPE SETTING : DELAY mode 3. Adjust VR501 so that the pulse period (A) is 1.1μs as shown.	 A = 1.1μs
Step 2. 1. After this adjustment, the C BURST SEPARATION ADJ. (2) is required.	

7-5. C BURST SEPARATION ADJUSTMENT (2) (FINE)

(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP503 TP504	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR501 (C SYNC PHASE)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 7-1. 2. C BURST SEPARATION ADJ. (1)(7-4) should be completed before this adjustment is done.
1. SCOPE CH1 : TP503 SCOPE CH2 : TP504 2. SCOPE SETTING : DELAY mode 3. Adjust VR501 so that the pulse position of TP504 is as shown. Note: When the pulses of TP503 and TP504 are being adjusted, observe the centre of jitter of TP504 as shown.	 A = B = ± 10%

7-6. Y APC ADJUSTMENT (1)(COARSE)

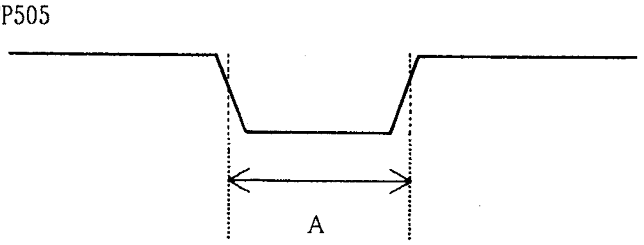
(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP505	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR504 (Y APC)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE SETTING : DELAY mode (50ns/TIME)
2. Adjust VR504 so that the (A) period is 150ns ± 5ns as shown.



A = 150ns ± 5ns

7-7. Y APC ADJUSTMENT (2)(FINE)

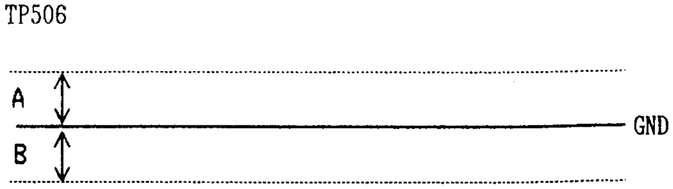
(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP506	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR504 (Y APC)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE SETTING : GND
2. Set the scan line to the centre position of the scope.
3. SCOPE SETTING : AC MODE
4. Adjust VR504 so that the A and B levels are balanced as shown.



A = B ± 10% (V RATE)

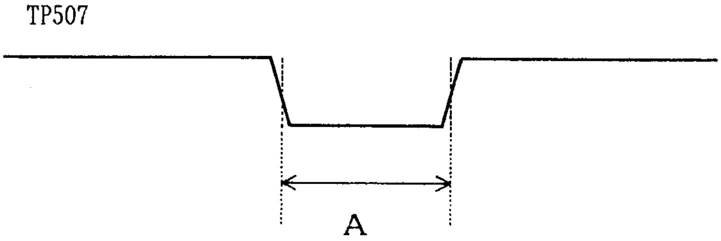
7-8. C APC ADJUSTMENT (1)(COARSE)

(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP507	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR505 (C APC)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE SETTING : DELAY mode (50ns/TIME)
2. Adjust VR505 so that the (A) period is 150ns ± 5ns as shown.



A = 150ns ± 5ns

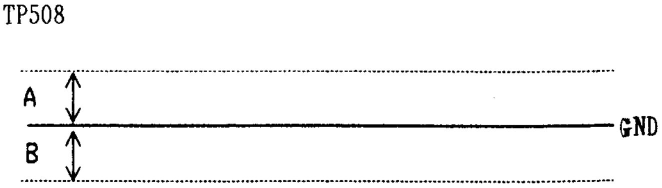
7-9. C APC ADJUSTMENT (2)(FINE)

(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP508	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR505 (C APC)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE SETTING : GND
2. Set the scan line to the center position on the scope.
3. SCOPE SETTING : AC MODE
4. Adjust VR505 so that the A and B levels are balanced as shown.

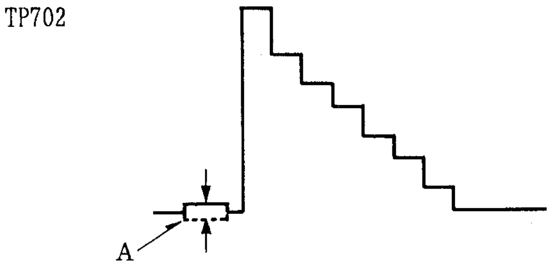


A = B ± 10% (V RATE)

7-10. Y A/D REFERENCE VOLTAGE ADJUSTMENT

(VIDEO 4)

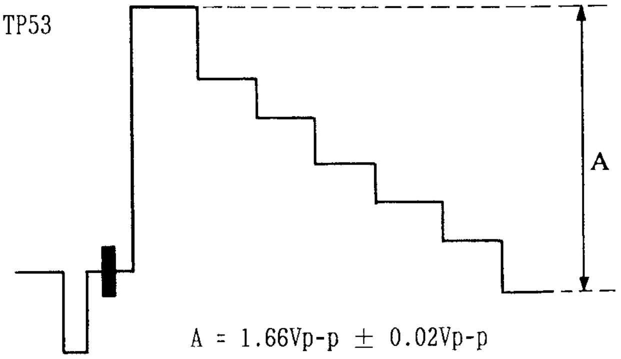
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP702 (on VIDEO 3 P.C.BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR52 (Y CP)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.
1. SCOPE : TP702 2. When VR52 is turned, a step will appear at the REFERENCE VOLTAGE level. 3. Adjust VR52 so that the "A" Portion is "FLAT".	

7-11. Y A/D INPUT LEVEL ADJUSTMENT

(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP53	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR51 (Y INPUT LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.
1. SCOPE CH1 : TP53 2. Adjust VR51 so that the (A) level is 1.66Vp-p ± 0.02Vp-p.	 A = 1.66Vp-p ± 0.02Vp-p

7-12. C A/D REFERENCE VOLTAGE ADJUSTMENT

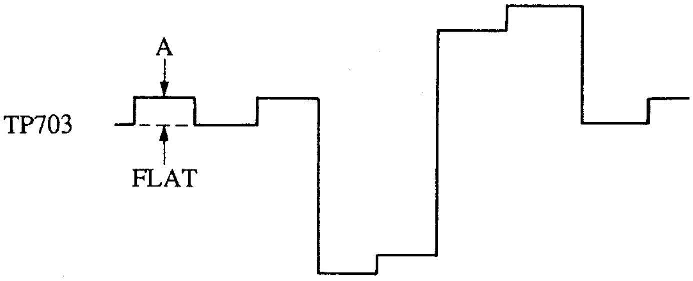
(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP703 (on VIDEO 3 P.C.BOARD)	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR54 (C CP)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION: Refer to the SECTION 7-1.

1. SCOPE : TP703
2. When VR54 is turned, a step will appear at the REFERENCE VOLTAGE level.
3. Adjust VR54 so that the "A" level is "FLAT".



7-13. C A/D INPUT LEVEL ADJUSTMENT

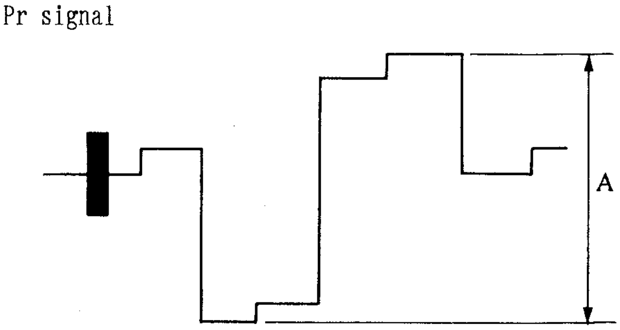
(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP54	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR	OSCILLOSCOPE	---------	VR53 (C INPUT LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION: Refer to the SECTION 7-1.

1. SCOPE : TP54
2. Adjust VR53 so that the Pr level is 1.69Vp-p ± 0.02Vp-p.



A = 1.69Vp-p ± 0.02Vp-p

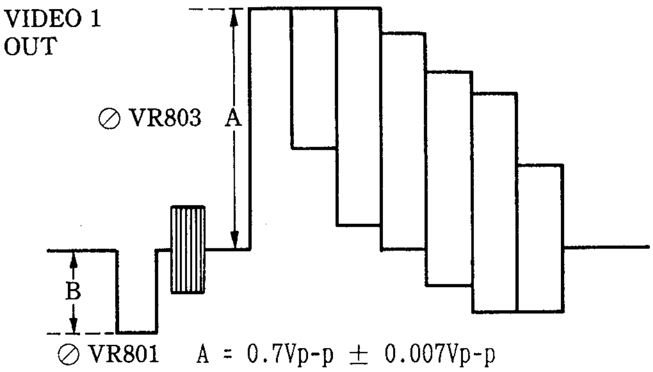
7-14. VIDEO OUTPUT LEVEL ADJUSTMENT

(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (W/75ohm termination) (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR803 (VIDEO OUT LEV.) VR801 (SYNC LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE : VIDEO 1 OUT (W/75ohm termination)
2. Adjust VR803 so that the video level (A) is 0.7Vp-p ± 0.007Vp-p.
3. Adjust VR801 so taht the sync level (B) is 0.3Vp-p ± 0.004Vp-p.



A = 0.7Vp-p ± 0.007Vp-p
B = 0.3Vp-p ± 0.004Vp-p

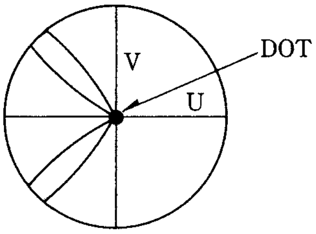
7-15. CARRIER LEAKAGE ADJUSTMENT

(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	VECTORSCOPE	---------	VR704 (PB BAL) VR705 (PR BAL)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE : VIDEO 1 OUT
2. Set the vectorscope at max gain.
3. Adjust VR705 so that the centre dot doesn't see double.
4. Adjust VR704 so taht the dot comes on V axis.

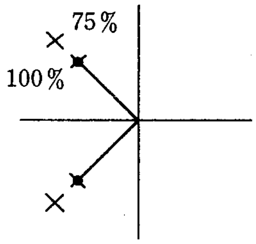


7-16. BURST LEVEL ADJUSTMENT

(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	VECTORSCOPE	---------	VR703 (BURST LEVEL) VR706 (BURST PHASE)

ADJUSTMENT PROCEDURE & SPECIFICATION

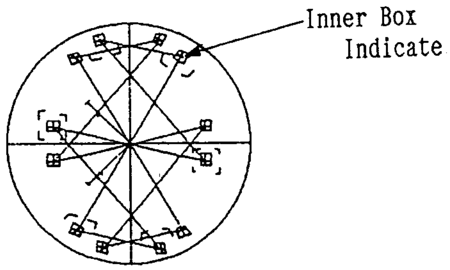
MACHINE CONDITION	Refer to the SECTION 7-1.
1. SCOPE : VIDEO 1 OUT 2. Set the vectorscope at 100% vectors. 3. Adjust VR703 and VR706 so that the burst level is 100%.	

7-17. VIDEO OUT VECTOR ADJUSTMENT

(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	VECTORSCOPE	-----------	VR701 (PR MOD LEVEL) VR702 (PB MOD LEVEL) VC701 (QUAD)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.
1. VECTOR SCOPE : VIDEO 1 OUT (W/75ohm Termination) 2. Set the vectorscope at 100% vectors. 3. Adjust VR701/VR702/VC701 so that the each of vector are in the Inner Box of the vectorscope.	

7-18. VIDEO 2 OUTPUT LEVEL CONFIRMATION

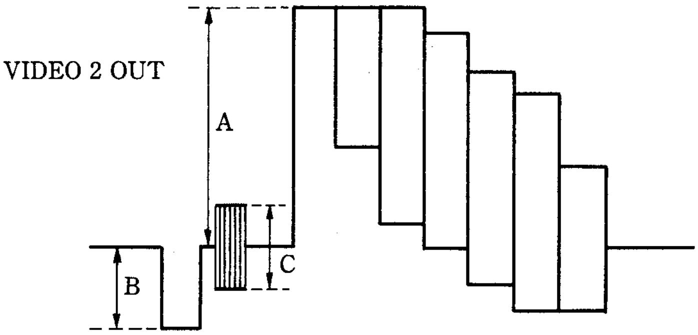
(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 2 OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	-----------	-----------

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE : VIDEO 2 OUT
2. Confirm that the VIDEO output level is as shown.
3. If it is not within specification, readjust VIDEO OUTPUT LEVEL ADJ. (7-14) and BURST LEVEL ADJ. (7-15).



A = 0.7Vp-p ± 0.014Vp-p
B = 0.3Vp-p ± 0.008Vp-p
C = 0.3Vp-p ± 0.008Vp-p

7-19. VIDEO 2 OUTPUT VECTOR CONFIRMATION

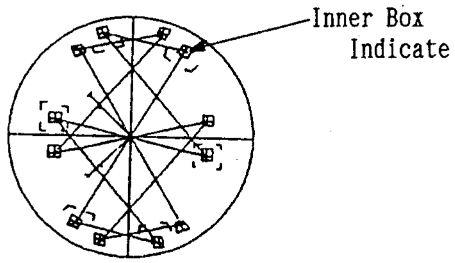
(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 2 OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	VECTORSCOPE	-----------	-----------

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. VECTORSCOPE : VIDEO 2 OUT (W/75ohm Termination)
2. Set the vectorscope at 100% vectors.
3. Confirm that the each of vector are in the Inner Box of the vectorscope.
4. If it is not within specification, readjust VIDEO OUT VECTOR ADJ. (7-17).



7-20. CHARACTER LEVEL CONFIRMATION

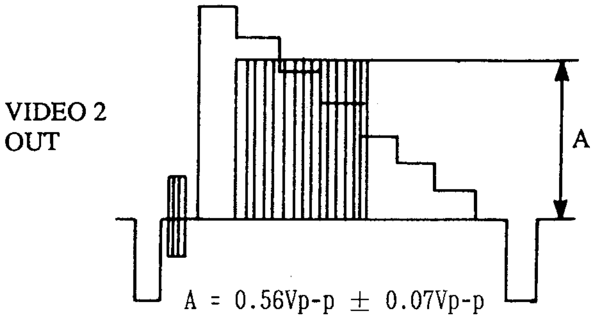
(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 2 OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	-----------	-----------

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. VECTOR SCOPE : VIDEO 2 OUT (W/75ohm Termination)
2. Confirm the CHARACTER LEVEL (A) is 0.56Vp-p ± 0.07Vp-p.



7-21. COMPONENT Y OUTPUT LEVEL ADJUSTMENT

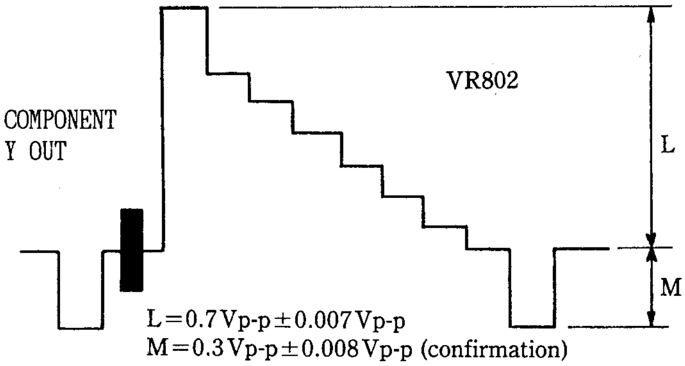
(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	-----------	VR802 (Y OUT LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE : COMPONENT Y OUT (W/75ohm Termination)
2. Confirm the SYNC level (M) is 0.3Vp-p ± 0.008Vp-p.
3. Adjust VR802 so that the Y level (L) is 0.7Vp-p ± 0.007Vp-p.
4. Note down (L).



L=0.7Vp-p±0.007Vp-p
M=0.3Vp-p±0.008Vp-p (confirmation)

7-22. COMPONENT Pb OUTPUT LEVEL ADJUSTMENT

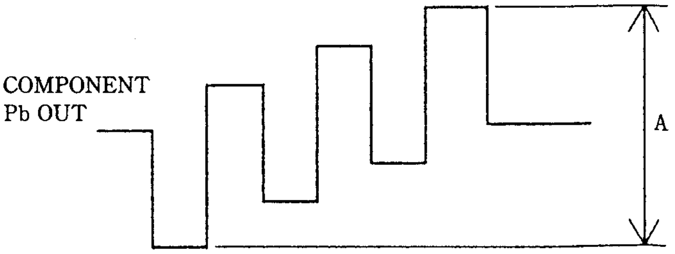
(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR807 (PB LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE : COMPONENT Pb OUT (W/75ohm Termination)
2. Adjust VR807 so that the Pb level (A) is 0.7Vp-p ± 0.007Vp-p.



A = 0.7Vp-p ± 0.007Vp-p

7-23. COMPONENT Pr OUTPUT LEVEL ADJUSTMENT

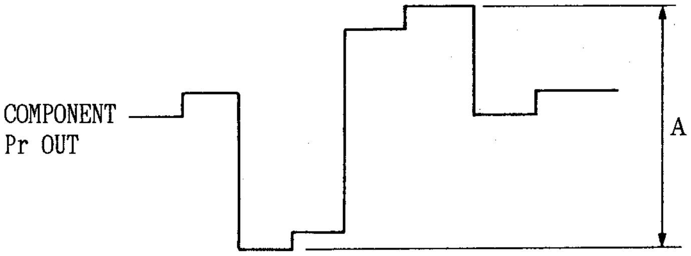
(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pr OUT (W/75ohm Termination) (on JACK PANEL BOARD	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	-----------	VR808 (PR LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. SCOPE : COMPONENT Pr OUT (W/75ohm Termination)
2. Adjust VR808 so that the Pr level (A) is 0.7Vp-p ± 0.007Vp-p.



A = 0.7Vp-p ± 0.007Vp-p

7-24. S-VIDEO Y OUTPUT LEVEL CONFIRMATION

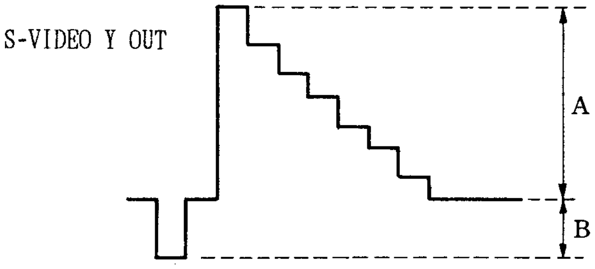
(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
Y (4P) OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	-----------

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

1. Please use a 4 pin S-VIDEO ←→ BNC adapter.
2. SCOPE : Y (4P) OUT (S-VIDEO OUT)
3. Confirm that the output level (A) and (B) are shown in figure.
4. If they sre not within specification, readjust COMPONENT Y OUTPUT ADJ.(7-21)



A = 0.7 ± 0.028Vp-p
B = 0.3 ± 0.016Vp-p

7-25. S-VIDEO C OUTPUT LEVEL ADJUSTMENT

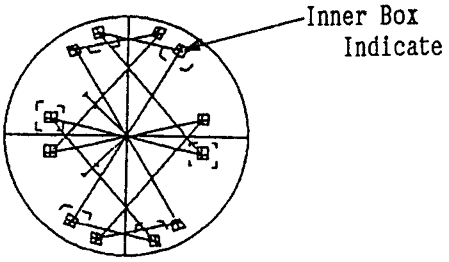
(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
C (4P) OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	VECTORSCOPE	---------	VR804 (C LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 7-1.

1. Please use S-VIDEO to BNC CONVERSION CONNECTOR. (4P → BNC)
2. VECTOR SCOPE : C(4P) OUT(S-VIDEO OUT)
   (W/75ohm Termination)
   VECTOR SCOPE SETTING:
   EXT MODE (Input a COMPONENT Y OUT)
3. Set the vectorscope at 100% vectors.
4. Adjust VR804 so that the each vector are in the Inner Box of the Vectorscope.

S-VIDEO C OUT



7-26. SAVE MODE CONFIRMATION

(VIDEO 3)

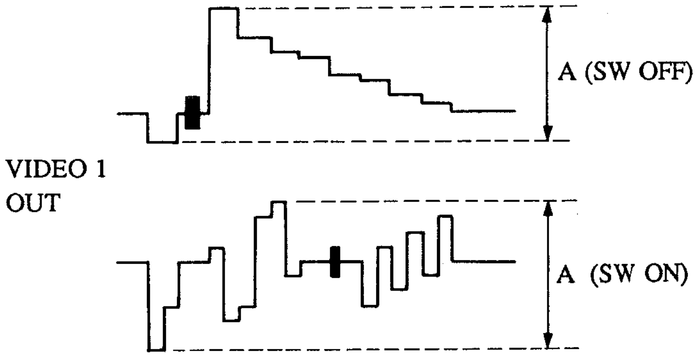
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO OUT 1 (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	CHECK CMPNT・BATT (on FRONT PANEL BOARD)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 7-1.

Step 1.

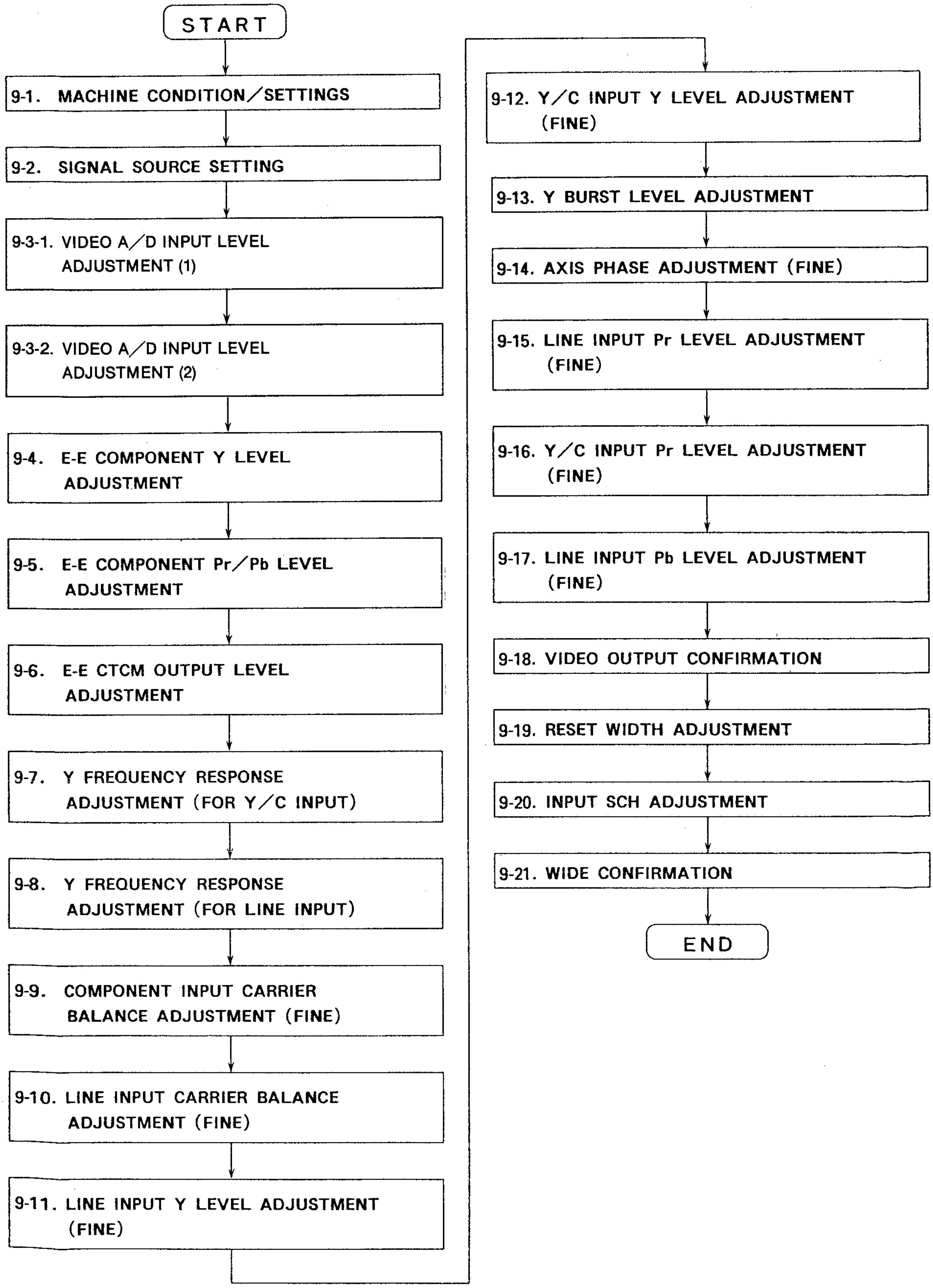
1. SCOPE : VIDEO 1 OUT
2. Play back the 100% COLOUR BAR portion of Alignment Tape.
3. Confirm the level (A) is 1.0Vp-p ± 0.1Vp-p.



A = 1.0Vp-p ± 0.1Vp-p

9. DECODER & CTCM BOARD (1/2)

DECODER & CTCM (1/2) SECTION FLOWCHART


START
9-1. MACHINE CONDITION/SETTINGS
9-2. SIGNAL SOURCE SETTING
9-3-1. VIDEO A/D INPUT LEVEL ADJUSTMENT (1)
9-3-2. VIDEO A/D INPUT LEVEL ADJUSTMENT (2)
9-4. E-E COMPONENT Y LEVEL ADJUSTMENT
9-5. E-E COMPONENT Pr/Pb LEVEL ADJUSTMENT
9-6. E-E CTCM OUTPUT LEVEL ADJUSTMENT
9-7. Y FREQUENCY RESPONSE ADJUSTMENT (FOR Y/C INPUT)
9-8. Y FREQUENCY RESPONSE ADJUSTMENT (FOR LINE INPUT)
9-9. COMPONENT INPUT CARRIER BALANCE ADJUSTMENT (FINE)
9-10. LINE INPUT CARRIER BALANCE ADJUSTMENT (FINE)
9-11. LINE INPUT Y LEVEL ADJUSTMENT (FINE)
9-12. Y/C INPUT Y LEVEL ADJUSTMENT (FINE)
9-13. Y BURST LEVEL ADJUSTMENT
9-14. AXIS PHASE ADJUSTMENT (FINE)
9-15. LINE INPUT Pr LEVEL ADJUSTMENT (FINE)
9-16. Y/C INPUT Pr LEVEL ADJUSTMENT (FINE)
9-17. LINE INPUT Pb LEVEL ADJUSTMENT (FINE)
9-18. VIDEO OUTPUT CONFIRMATION
9-19. RESET WIDTH ADJUSTMENT
9-20. INPUT SCH ADJUSTMENT
9-21. WIDE CONFIRMATION
END

9-1. MACHINE CONDITION SETTING

(DECODER & CTCM)

Set the switches on the FRONT PANEL as follows unless specified.

MODE -- EE/PB
METER SELECT -- VIDEO・TRACKING

Set the switches on the JACK PANEL as follows unless specified.

VIDEO INPUT SELECT ------------------------------------- VIDEO IN
CAMERA INPUT SELECT ------------------------------------- COMPONENT
TRACKING VR ------------------------------------- FIXED POSITION
VIDEO IN LEVEL ------------------------------------- FIXED POSITION

9-2. SIGNAL SOURCE SETTING

(DECODER & CTCM)

Confirm the output level of signal Generator as follows unless specified.

1. COMPOSITE SIGNAL : 100% colour bar (without SET UP)
VIDEO LEVEL = 0.7Vp-p
SYNC LEVEL = 0.3Vp-p

2. COMPONENT SIGNAL : 100% colour bar (without SET UP)
Y LEVEL = 0.7Vp-p
SYNC LEVEL = 0.3Vp-p
Pb LEVEL = 0.7Vp-p
Pr LEVEL = 0.7Vp-p

3. Y/C SIGNAL : 100% colour bar (without SET UP)
Y LEVEL = 0.7Vp-p
SYNC LEVEL = 0.3Vp-p
C LEVEL = 0.885Vp-p

9-3-1. VIDEO A/D INPUT LEVEL ADJUSTMENT (1)

(DECODER & CTCM)

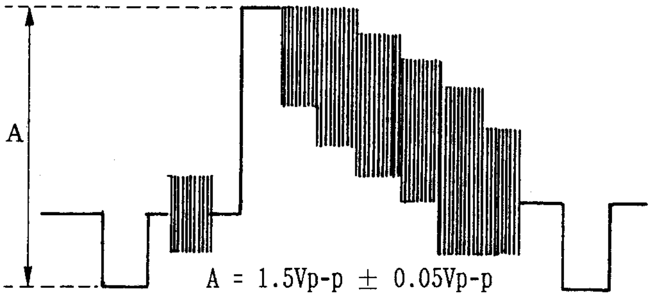
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP41	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR41 (AGC LEV.)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 9-1.

Step 1.

1. SCOPE : TP41
2. Adjust VR41 so that the input signal level (A) is 1.5Vp-p ± 0.05Vp-p as shown.



A = 1.5Vp-p ± 0.05Vp-p

9-3-2. VIDEO A/D INPUT LEVEL ADJUSTMENT (2)

(DECODER & CTCM)

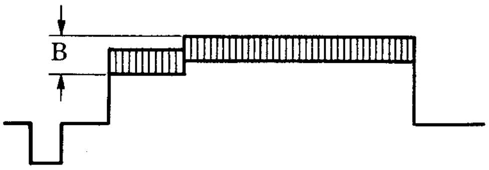
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP41	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 50% WHITE	VR41 (AGC LEV.)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 9-1.

1. SCOPE : TP41
1. SCOPE : TP41
2. Adjust VR41 so that the "B" level is FLAT.

Note:
Adjust VR41 within the range of satisfying the specification (A) of Adj. 9-3-1.



B = 0 ± 10mVp-p

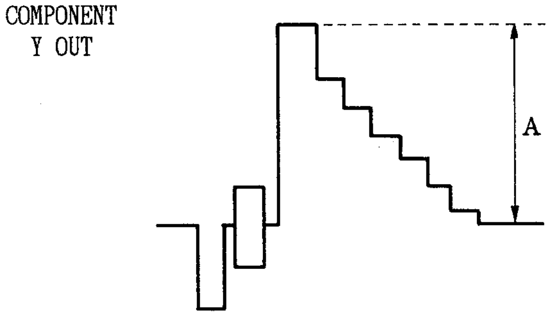
9-4. E-E COMPONENT Y LEVEL ADJUSTMENT (DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR506 (EE Y LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : CAMERA IN 3. CAMERA INPUT SELECT : COMPONENT 4. COMPONENT Y OUTPUT LEVEL ADJ. (7-21) should be compoleted before this adjustment is done.

1. SCOPE : COMPONENT Y OUT
   (W/75ohm Termination)
2. Adjust VR506 so that the Y LEVEL (A) is as shown.
3. Note down (A).



A = L ± 7mVp-p AND
A = 700mVp-p ± 14mVp=p
Note: L is COMPONENT Y LEVEL (SECTION 7-21.)

9-5. E-E COMPONENT Pr/Pb LEVEL ADJUSTMENT (DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP601	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR501 (Pr LEV2) VR502 (Pb LEV 2)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

1. Refer to the SECTION 9-1.
2. VIDEO INPUT SELECT : CAMERA IN
3. COMPONENT Pb OUTPUT LEVEL ADJ. (7-22) and COMPONENT Pr OUTPUT LEVEL ADJ. (7-23) should be completed before this adjustment is done.

Step 1.

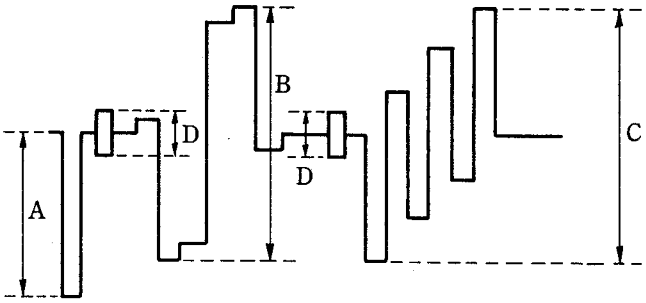
1. SCOPE : TP601 (CTCM Signal)
2. Set the Sync level (A) to 6.5 divisions on the oscilloscope display (uncalibrated).

Step 2.

1. Confirm that the B, C and D levels are as shown below.
   B = 7.0 divisions ± 0.2 divisions
   C = 7.0 divisions ± 0.2 divisions
   D = 3.0 divisions ± 0.2 divisions
2. If it is not within specification, adjust VR501 so that the Pr level is 7.0 divisions ± 0.2 divisions and adjust VR502 so that the Pb level is 7.0 divisions ± 0.2 divisions.
3. After this adjustment, confirm the Burst level (D) is 3.0 divisions ± 0.2 divisions.

Note:
After this adjustment, set the "Variable level" of the OSCILLOSCOPE back to the calibrated position.

TP601

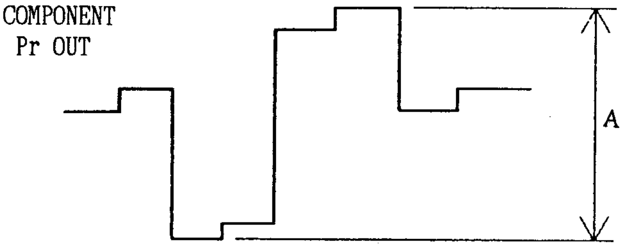
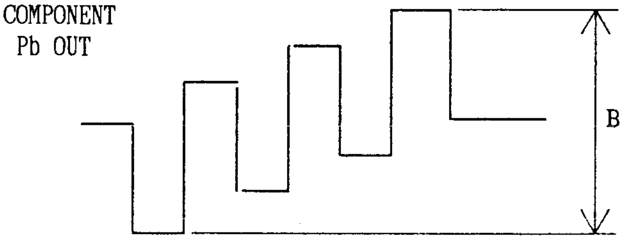


9-6 . E-E CTCM OUTPUT LEVEL ADJUSTMENT

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR604 (CTCM LEV) VR502 (Pb LEV 2)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : CAMERA IN 3. COMPONENT Pb OUTPUT LEVEL ADJ. (7-22) and COMPONENT Pr OUTPUT LEVEL ADJ. (7-23) should be completed before this adjustment is done.
Step 1. 1. SCOPE : COMPONENT Pr OUT 2. Adjust VR604 so that the Pr level (A) is 700mVp-p ± 14mVp-p as shown. 3. Note down (A).	 A = 700mVp-p ± 14mVp-p
Step 2. 1. SCOPE : COMPONENT Pb OUT 2. Adjust VR502 so that the Pb level (B) is 700mVp-p ± 14mVp-p as shown. 3. Note down (B).	 B = 700mVp-p ± 14mVp-p

9-7. Y FREQUENCY RESPONSE ADJUSTMENT (FOR Y/C INPUT)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE	OSCILLOSCOPE OR WAVEFORM MONITOR	Step 1. (C CAMERA IN) COMPONENT 60% H.SWEEP	VC141 (Y FREQ 2)
		ALIGNMENT ☐ TAPE		Step 2. (CAMERA IN) Y/C 60% H.SWEEP	

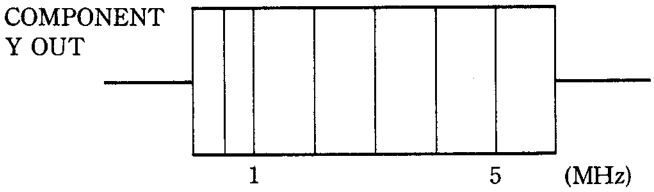
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

1. Refer to the SECTION 9-1.
2. Y PLAYBACK FREQUENCY RESPONSE ADJ. (6-10) should be completed before this adjustment is done.
3. VIDEO INPUT SELECT : CAMERA IN

Step 1.

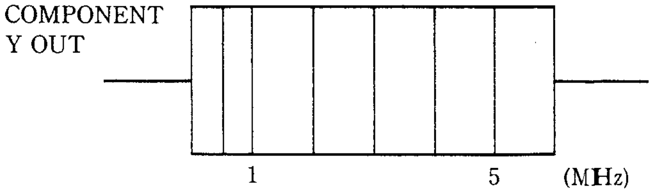
1. INPUT POINT : CAMERA IN COMPONENT
2. CAMERA INPUT SELECT : COMPONENT
3. SCOPE : COMPONENT Y OUT
4. Check the frequency response (0.5MHz : 5MHz, 0.5MHz = 100% : Response) and note down it.



0.5MHz = 100% (Reference)
5.0MHz = A%

Step 2.

1. INPUT POINT : CAMERA IN YC
2. CAMERA INPUT SELECT : YC
3. SCOPE : COMPONENT Y OUT
4. Adjust VC141 so that the frequency response is as shown.



0.5MHz = 100% (Reference)
5.0MHz = A% ± 3%
Note: A is frequency response at 5.0MHz of COMPONENT input.

9-8. Y FREQUENCY RESPONSE ADJUSTMENT (FOR LINE INPUT)

(DECODER & CTCM)

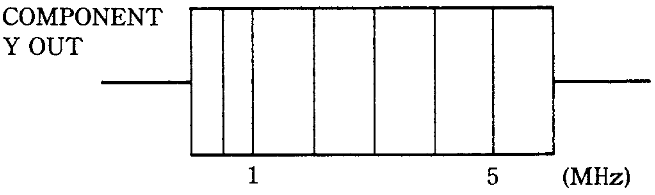
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE OR WAVEFORM MONITOR	Step 1. (C CAMERA IN) COMPONENT 60% H.SWEEP Step 2. (CAMERA IN) 60% H.SWEEP	VC35 (Y FREQ 1)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. Y PLAYBACK FREQUENCY RESPONSE ADJ. (6-10) and Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (FOR Y/C INPUT)(9-7) should be completed before this adjustment is done.

Step 1.

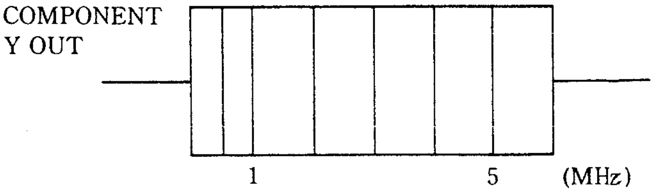
1. INPUT POINT : CAMERA IN COMPONENT
2. VIDEO INPUT SELECT : CAMERA IN
3. CAMERA INPUT SELECT : COMPONENT
4. SCOPE : COMPONENT Y OUT
5. Check the frequency response 0.5MHz : 5MHz, 0.5MHz = 100% : Response) and note down it.



0.5MHz = 100% (Reference)
5.0MHz = A%

Step 2.

1. INPUT POINT : VIDEO IN
2. VIDEO INPUT SELECT : VIDEO IN
3. SCOPE : COMPONENT Y OUT
4. Adjust VC35 so that the frequency response is as shown.



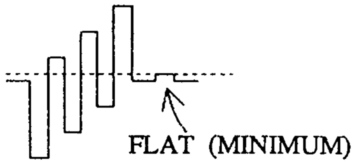
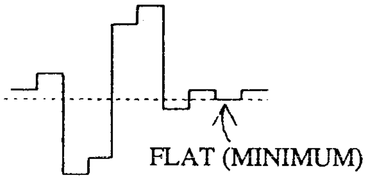
0.5MHz = 100% (Reference)
5.0MHz = A% ± 3%
Note: A is frequency response at 5.0MHz of COMPONENT input.

9-9. COMPONENT INPUT CARRIER BALANCE ADJUSTMENT (FINE)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR601 (PB CLAMP REF) VR602 (PR CLAMP REF)

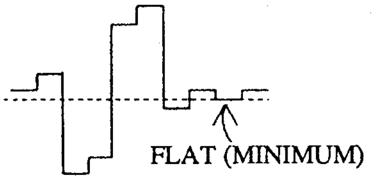
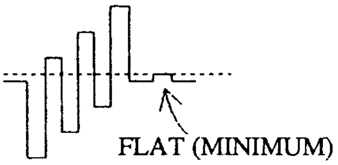
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to eht SECTION 9-1. 2. VIDEO INPUT SELECT : CAMERA IN 3. CAMERA INPUT SELECT : COMPONENT
Step 1. 1. SCOPE : COMPONENT Pb OUT 2. Adjust VR601 so that the burst portion of Pb signal is "flat" as shown.	
Step 2. 1. SCOPE : COMPONENT Pr OUT 2. Adjust VR602 so that the burst portion of Pr signal is "flat" as shown.	

9-10. LINE INPUT CARRIER BALANCE ADJUSTMENT (FINE)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR216 (PB BLK DC) VR217 (PR BLK DC)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : VIDEO IN 3. COMPONENT INPUT CARRIER BALANCE ADJ. (9-9) should be completed before this adjustment is done.
Step 1. 1. SCOPE : COMPONENT Pb OUT 2、Adjust VR216 so that the burst portion of Pb signal is"flat" as shown.	(Pr OUT) 
Step 2. 1. SCOPE : COMPONENT Pr OUT 2. Adjust VR217 so that the burst portion of Pr signal is "flat" as shown.	(Pb OUT) 

9-11. LINE INPUT Y LEVEL ADJUSTMENT (FINE)

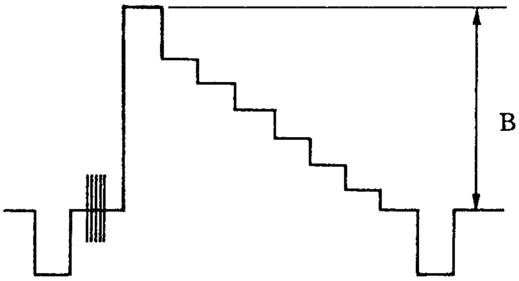
(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR141 (Y LEV 1)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : VIDEO IN 3. COMPONENT Y OUTPUT LEVEL ADJ. (7-21) and E-E COMPONENT Y LEVEL ADJ. (9-4) should be completed before this adjustment is done.

1. SCOPE : COMPONENT Y OUT
2. Adjust VR141 so that the Y level (B) is as shown.

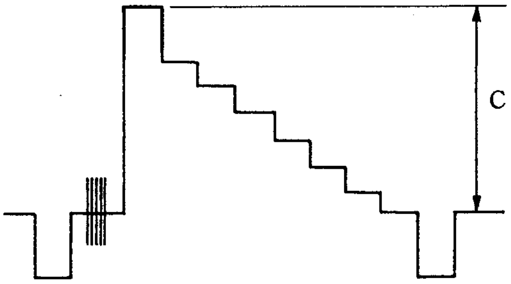


B = A ± 7mVp-p AND
B = 700mVp-p ± 14mVp-p
Note: A is E-E COMPONENT Y LEVEL (SECTION9-4.)

9-12. Y/C INPUT Y LEVEL ADJUSTMENT (FINE)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPOSITE 100% COLOUR BAR	VR142 (Y LEV 2)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : CAMERA IN 3. CAMERA INPUT SELECT : YC 4. The following adjustments should be completed before this adjustment is done. 1) COMPONENT Y OUTPUT LEVEL ADJ. (7-21) 2) E-E COMPONENT Y LEVEL ADJ. (9-4) 3) LINE INPUT Y LEVEL ADJ. (9-11)
1. SCOPE : COMPONENT Y OUT 2. Adjust VR142 so that the Y level (C) is as shown.	 C = A ± 7mVp-p AND C = 700mVp-p ± 14mVp-p Note: A is E-E COMPONENT Y LEVEL (SECTION 9-4 .)

9-13. Y BURST LEVEL ADJUSTMENT

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP504	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR906 (Y BU LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

1. Refer to the SECTION 9-1.
2. VIDEO INPUT SELECT : CAMERA IN
3. CAMERA INPUT SELECT : COMPONENT
4. The following adjustments should be completed before this adjustment is done.
   1) COMPONENT Y OUTPUT LEVEL ADJ. (7-21)
   2) E-E COMPONENT Y LEVEL ADJ. (9-4)
   3) LINE INPUT Y LEVEL ADJ. (9-11)
   4) Y/C INPUT LEVEL ADJ. (9-12)

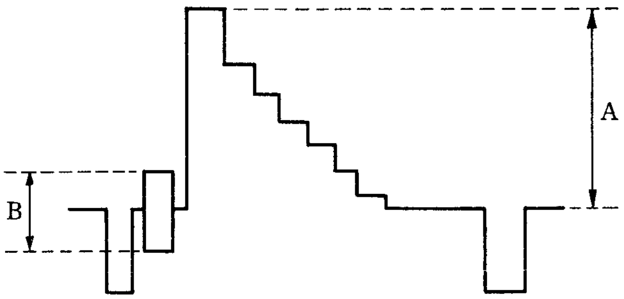
Step 1.

1. SCOPE : TP504
2. Set the Y level (A) to 7.0 divisions on the oscilloscope display (uncablibrated).

Step 2.

1. Adjust the Burst level (B) is 3.0 ± 0.1 divisions against the Y level (A) as shown.

Note:
After this adjustment, set the "Variable level" of the OSCILLOSCOPE back to the calibrated position.

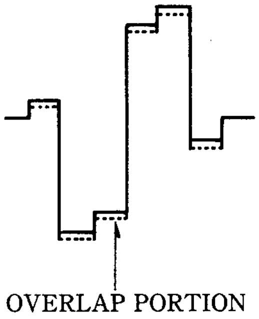
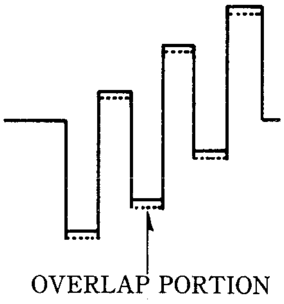


A = 7.0 DIVITIONS
B = 3.0 ± 0.1 DIVISIONS

9-14. AXIS PHASE ADJUSTMENT (FINE)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR218 (AXIS 1) VC401 (AXIS 2)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : VIDEO IN
Step 1. 1. SCOPE : COMPONENT Pr OUT 2. Adjust VR218 so that overlap portion of waveform becomes minimum as a whole.	Pr OUT VR218 
Step 2. 1. SCOPE : COMPONENT Pb OUT 2. Adjust VC401 so that overlap portion of waveform becomes minimum as a whole.	Pb OUT VC401 

9-15. LINE INPUT Pr LEVEL ADJUSTMENT (FINE)

(DECODER & CTCM)

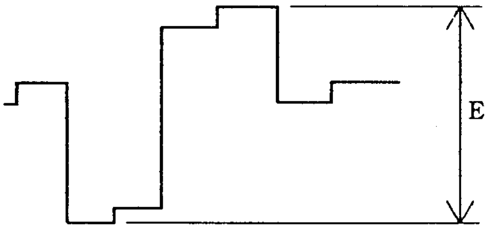
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pr OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR215 (PR LEV 1)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : VIDEO IN 3. The following adjustments should be completed before this adjustment is done. 1) COMPONENT Pr OUTPUT LEVEL ADJ. (7-23) 2) E-E COMPONENT Pr/Pb LEVEL ADJ. (9-5) 3) E-E CTCM OUT LEVEL ADJ. (9-6)

Step 1.

1. SCOPE : COMPONENT Pr OUT
2. Adjust VR215 so that the Pr level (E) is as shown.

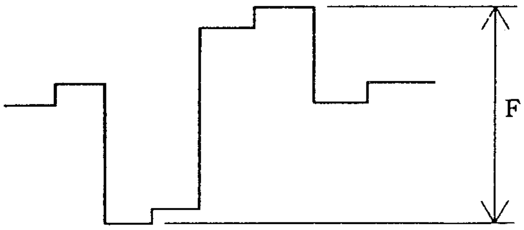


E = A ± 7mVp-p AND
E = 700mVp-p ± 14mVp-p
Note: A is E-E COMPONENT Pr LEVEL (SECTION 9-6.)

9-16. Y/C INPUT Pr LEVEL ADJUSTMENT (FINE)

(DECODER & CTCM)

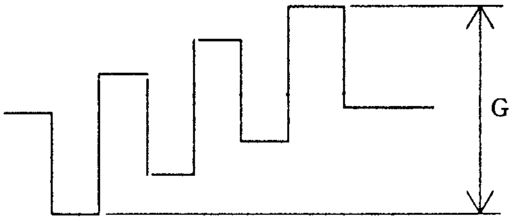
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pr OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) Y/C 100% COLOUR BAR	VR165 (C LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : CAMERA IN 3. CAMERA INPUT SELECT : Y/C 4. The following adjustment should be completed before this adjustment is done. 1) COMPONENT Pr OUTPUT LEVEL ADJ. (7-23) 2) E-E COMPONENT Pr/Pb LEVEL ADJ. (9-5) 3) E-E CTCM OUT LEVEL ADJ. (9-6) 4) LINE INPUT Pr LEVEL ADJ. (9-15)
1. SCOPE : COMPONENT Pr OUT 2. Adjust VR165 so that the Pr level (F) is as shown.	 F = A ± 7mVp-p AND F = 700mVp=p ± 14mVp-p Note: A is E-E COMPONENT Pr LEVEL (SECTION 9-6.)

9-17. LINE INPUT Pb LEVEL ADJUSTMENT (FINE)

(DECODER & CTCM)

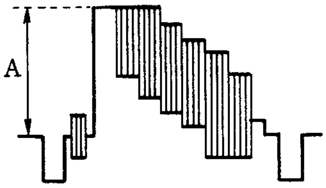
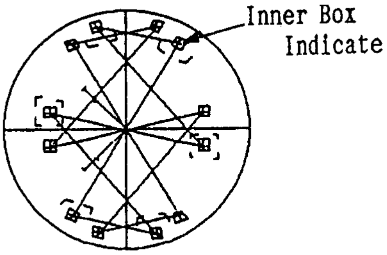
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR213 (PB LEV 1)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : VIDEO IN 3. The following adjustments should be completed before this adjustment is done. 1) COMPONENT Pb OUTPUT LEVEL ADJ. (7-22) 2) E-E COMPONENT Pr/Pb LEVEL ADJ. (9-5) 3) E-E CTCM OUTPUT LEVEL ADJ. (9-6)
1. SCOPE : COMPONENT Pb OUT 2. Adjust VR213 so that the Pb level (G) is as shown.	 G = B ± 7mVp-p AND G = 700mVp-p ± 14mVp-p Note: B is E-E COMPONENT Pb LEVEL (SECTION 9-6.)

9-18. VIDEO OUTPUT CONFIRMATION

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (W/75ohm Termination) (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE	OSCILLOSCOPE AND VECTORSCOPE	(CAMERA IN) COMPONENT/YC/ COMPOSITE 100% COLOUR BAR	-----------
		ALIGNMENT ☐ TAPE		(VIDEO IN) COMPOSITE 100% COLOUR BAR	

ADJUSTMENT PROCEDURE & SPECIFICATION		
MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : CAMERA IN / VIDEO IN 3. CAMERA INPUT SELECT : COMPONENT/YC/COMPOSITE 4. The following adjustments should be completed before this adjustment is done. 1) VIDEO OUT LEVEL ADJ. (7-14) 2) VIDEO OUT VECTOR ADJ. (7-17)	
Step 1. 1. OSCILLOSCOPE AND VECTORSCOPE: VIDEO 1 OUT 2. Confirm that all the VIDEO OUTPUTS are as shown, and make sure inputs and output levels match.	OSCILLOSCOPE  SPECIFICATION: A = 700 ± 14mVp-p	VECTORSCOPE  SPECIFICATION: each vector is within inner box
Step 2. 1. If it is not within specification, go back to the begining of this SECTION.	Go to the SECTION 9-1.	

9-19. RESET WIDTH ADJUSTMENT

(DECODER & CTCM)

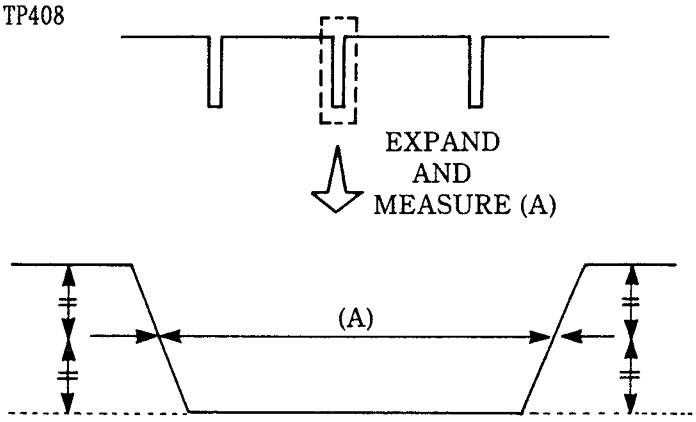
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP408	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR403 (RSTW)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : VIDEO IN

Step 1.

1. SCOPE : TP408
2. Adjust VR403 so that the pulse width (A) is 3.8μs ± 0.1μs as shown.



A = 3.8 ± 0.1 μs

9-20. INPUT SCH ADJUSTMENT

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP401 TP402	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	SCH METER AND OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR401 (SCH (-))

ADJUSTMENT PROCEDURE & SPECIFICATION

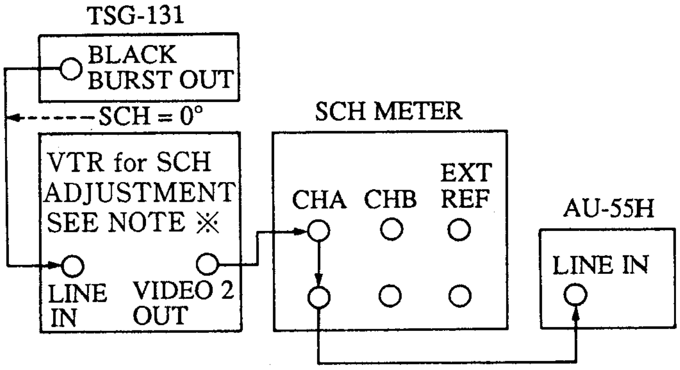
MACHINE CONDITION

1. Refer to the SECTION 9-1.
2. VIDEO INPUT SELECT : VIDEO IN

Step 1.

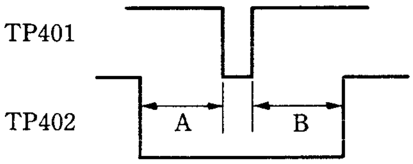
CONNECTION METHOD

※ Note:
AU-660/665/66H/65H can be used.


TSG-131
BLACK BURST OUT
SCH = 0°
VTR for SCH ADJUSTMENT SEE NOTE ※
LINE IN
VIDEO 2 OUT
SCH METER
CHA
CHB
EXT REF
AU-55H
LINE IN

Step 2.

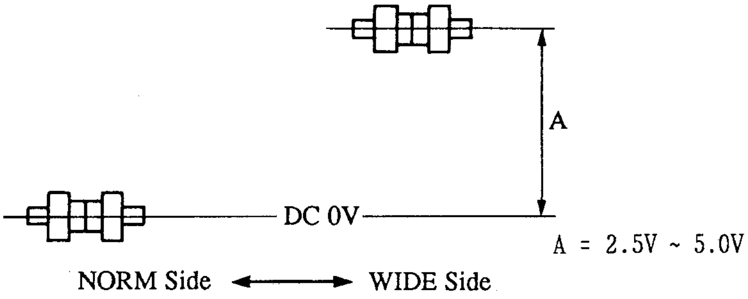
1. SCH METER (METER 1751) : SCH Mode
2. Adjust another MII VTR (adjustment instrument) so that the SCH phase becomes ± 0°.
3. Connect the oscilloscope to TP401 and TP402.
4. Adjust VR401 so that the (A) equal (B) as shown in figure.


TP401
TP402
A
B

A = B ± 0.5msec

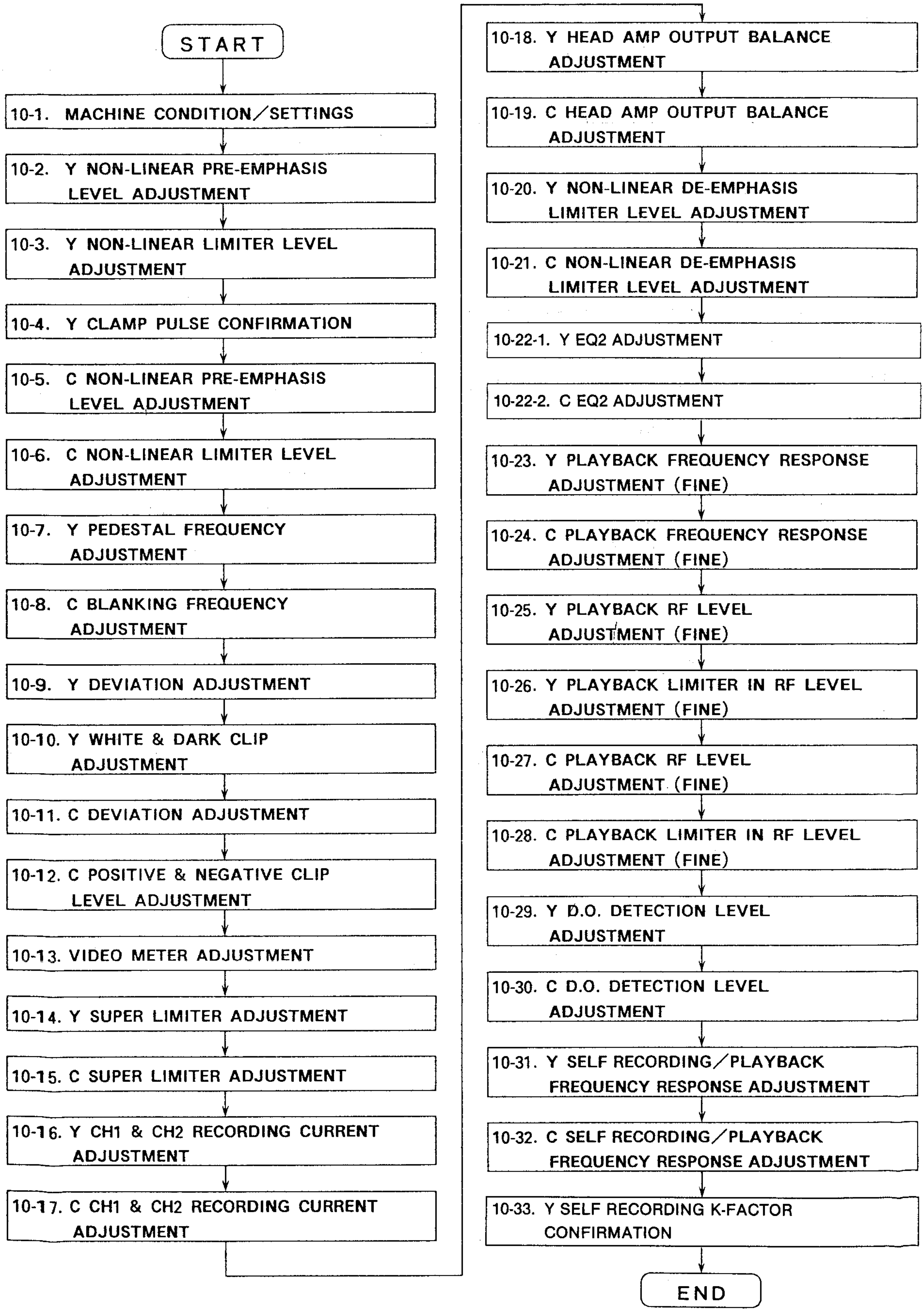
9-21. WIDE CONFIRMATION

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
S-VIDEO C OUT (on JACK PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) YC 100% COLOUR BAR	SW701

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 9-1. 2. VIDEO INPUT SELECT : CAMERA IN 3. CAMERA INPUT SELECT : YC
Step 1. Note: WITHOUT 75ohm Termination 1. SCOPE : S-VIDEO C OUT 2. Change SW701 to WIDE position. 3. Confirm the DC level (A) is 2.5V ~ 5.0V as shown in figure.	
Step 2. 1. After confirmation, set SW701 to the NORM position.	

10. VIDEO 1 AND VIDEO 2 BOARD (1/2)

VIDEO 1 AND VIDEO 2 SECTION (1/2) FLOWCHART


START
10-1. MACHINE CONDITION/SETTINGS
10-2. Y NON-LINEAR PRE-EMPHASIS LEVEL ADJUSTMENT
10-3. Y NON-LINEAR LIMITER LEVEL ADJUSTMENT
10-4. Y CLAMP PULSE CONFIRMATION
10-5. C NON-LINEAR PRE-EMPHASIS LEVEL ADJUSTMENT
10-6. C NON-LINEAR LIMITER LEVEL ADJUSTMENT
10-7. Y PEDESTAL FREQUENCY ADJUSTMENT
10-8. C BLANKING FREQUENCY ADJUSTMENT
10-9. Y DEVIATION ADJUSTMENT
10-10. Y WHITE & DARK CLIP ADJUSTMENT
10-11. C DEVIATION ADJUSTMENT
10-12. C POSITIVE & NEGATIVE CLIP LEVEL ADJUSTMENT
10-13. VIDEO METER ADJUSTMENT
10-14. Y SUPER LIMITER ADJUSTMENT
10-15. C SUPER LIMITER ADJUSTMENT
10-16. Y CH1 & CH2 RECORDING CURRENT ADJUSTMENT
10-17. C CH1 & CH2 RECORDING CURRENT ADJUSTMENT
10-18. Y HEAD AMP OUTPUT BALANCE ADJUSTMENT
10-19. C HEAD AMP OUTPUT BALANCE ADJUSTMENT
10-20. Y NON-LINEAR DE-EMPHASIS LIMITER LEVEL ADJUSTMENT
10-21. C NON-LINEAR DE-EMPHASIS LIMITER LEVEL ADJUSTMENT
10-22-1. Y EQ2 ADJUSTMENT
10-22-2. C EQ2 ADJUSTMENT
10-23. Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (FINE)
10-24. C PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (FINE)
10-25. Y PLAYBACK RF LEVEL ADJUSTMENT (FINE)
10-26. Y PLAYBACK LIMITER IN RF LEVEL ADJUSTMENT (FINE)
10-27. C PLAYBACK RF LEVEL ADJUSTMENT (FINE)
10-28. C PLAYBACK LIMITER IN RF LEVEL ADJUSTMENT (FINE)
10-29. Y D.O. DETECTION LEVEL ADJUSTMENT
10-30. C D.O. DETECTION LEVEL ADJUSTMENT
10-31. Y SELF RECORDING/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT
10-32. C SELF RECORDING/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT
10-33. Y SELF RECORDING K-FACTOR CONFIRMATION
END

10-1. MACHINE CONDITION SETTING

(VIDEO 1)

Set the switches on the FRONT PANEL as follows unless specified.

MODE -- EE/PB
METER SELECT -- VIDEO・TRACKING

Set the switches on the JACK PANEL as follows unless specified.

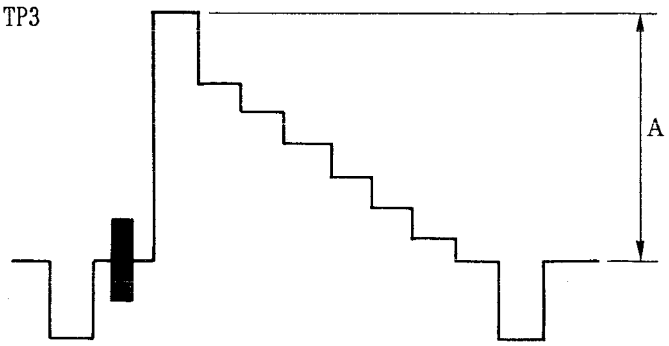
VIDEO INPUT SELECT -------------------------------------- CAMERA IN
CAMERA INPUT SELECT -------------------------------------- COMPONENT
TRACKING VR -------------------------------------- FIXED POSITION
VIDEO IN LEVEL -------------------------------------- FIXED POSITION

10-2. Y NON-LINEAR PRE-EMPHASIS LEVEL ADJUSTMENT

(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP3	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR1 (Y NL LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE : TP3 2. Adjust VR1 so that Y NL LEVEL (A) is 1.1Vp-p ± 0.02Vp-p as shown.	 A = 1.1Vp-p ± 0.02Vp-p

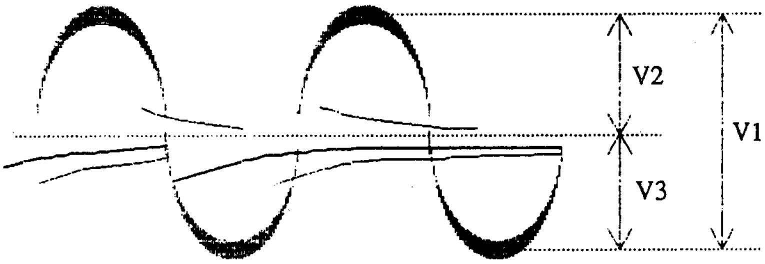
10-3. Y NON-LINEAR LIMITER LEVEL ADJUSTMENT

(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP4	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% BOW TIE	VR3 (Y LIMIT LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.

1. OSCILLOSCOPE SETTING : DC mode
2. SCOPE : TP4
3. Adjust VR3 so that the V1 level is 360mVp-p ± 5mVp-p as shown.
4. Confirm the V2 and V3 ratio becomes almost the same as shown.

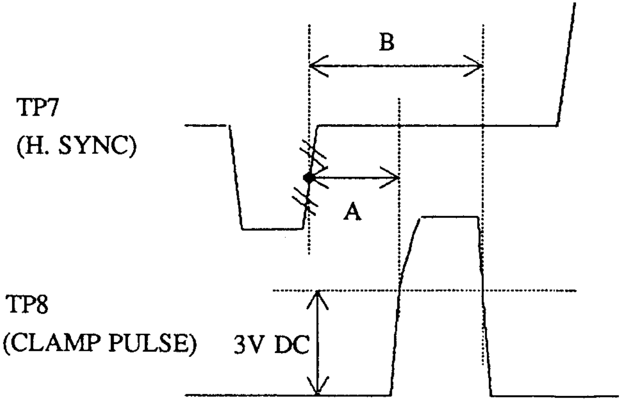


V1 = 360mVp-p ± 5mVp-p
V2 = V3 (CONFIRMATION)

10-4. Y CLAMP PULSE CONFIRMATION

(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP7 (H.SYNC) TP8 (CLAMP PULSE)	STOP	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLO SCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	-------------

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE CH1 : TP7 SCOPE CH2 : TP8 2. Confirm that the relation of the H SYNC and CLAMP PULSES are as shown.	 A = 0.9μs ± 0.2μs B = 3.2μs ± 0.2μs

10-5. C NON-LINEAR PRE-EMPHASIS LEVEL ADJUSTMENT

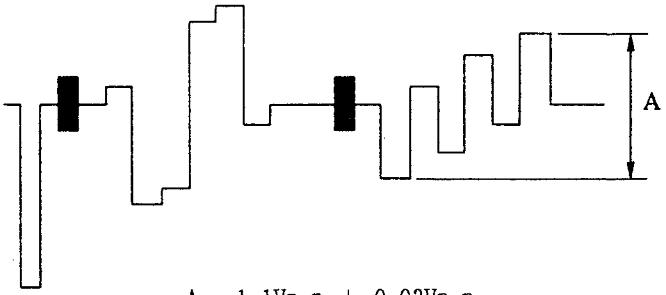
(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP10	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR10 (C NL LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE : TP10
2. Adjust VR10 so that C NL LEVEL (A) is 1.1Vp-p ± 0.02Vp-p as shown.



A = 1.1Vp-p ± 0.02Vp-p

10-6. C NON-LINEAR LIMITER LEVEL ADJUSTMENT

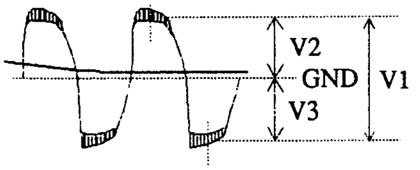
(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP11	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% BOW TIE	VR12 (C LIMIT LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE : TP11
2. Adjust VR12 so that the V1 level of Pb signal side is 400mVp-p ± 5mVp-p as shown.
3. Confirm the V2 and V3 ratio becomes almost same as shown.

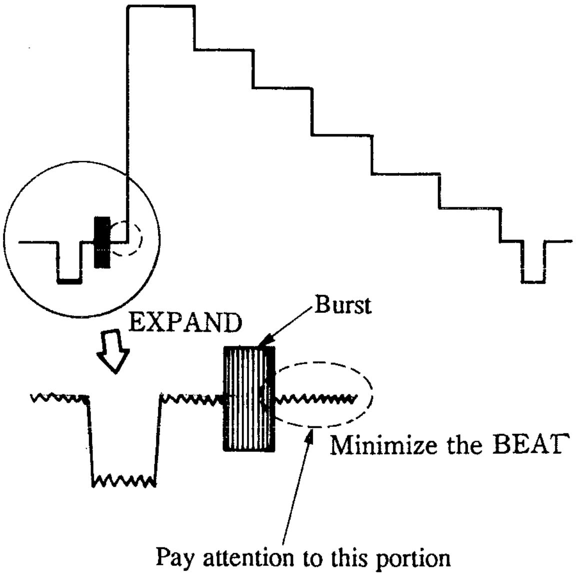


V1 = 400mVp-p ± 5mVp-p
V2 = V3 (CONFIRMATION)

10-7. Y PEDESTAL FREQUENCY ADJUSTMENT

(VIDEO 1)

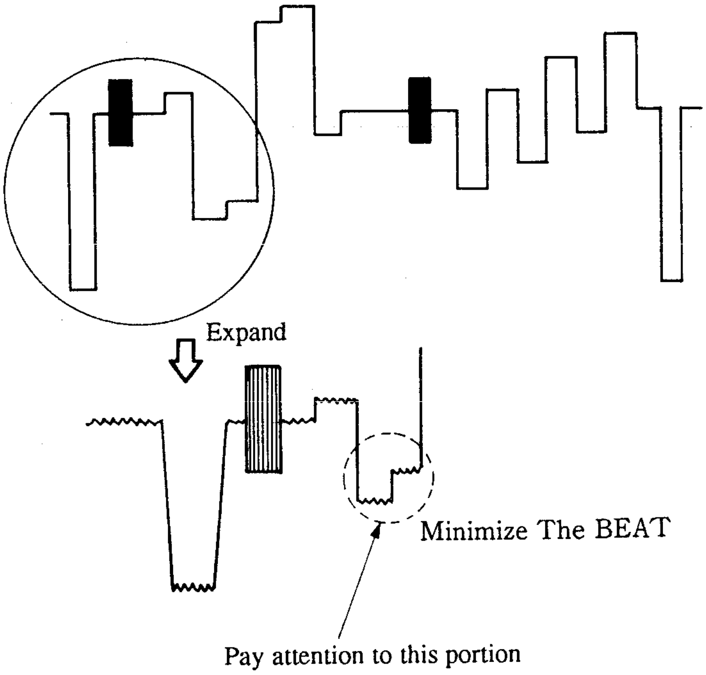
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP9 (on VIDEO 2 P.C.BOARD)	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR5 (Y FREQ)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
Step 1 1. Extend the VIDEO 1 P.C.BOARD. 2. Set the FREQUENCY and VOLTS AUPLITUDE DIAL of Sinewave Generator so that the output frequency is 7.4MHz ± 0.01MHz (0.3Vp-p ~ 0.4Vp-p). 3. Inject the Sinewave signal (7.4MHz ± 0.01MHz) to TP15 (on VIDEO 1 P.C.BOARD).	FREQUENCY SETTING TO : 7.4MHz ± 0.01MHz (0.3 ~ 0.4Vp-p).
Step 2. 1. Insert a Blank Tape, and place the unit in the record mode. 2. Turn VR5 (Y FREQ) from the full counterclockwise position to the full clockwise position slowly while in record. 3. SCOPE : TP9 (on VIDEO 2 P.C.BOARD) 4. Play back the just recorded portion. 5. Find where the frequency beat noise becomes minimized at the pedestal portion as shown. 6. Set VR5 so that the beat noise is minimized at pedestal portion as shown.	TP9 (on VIDEO 2 P.C.BOARD)  EXPAND Burst Minimize the BEAT Pay attention to this portion

10-8. C BLANKING FREQUENCY ADJUSTMENT

(VIDEO 1)

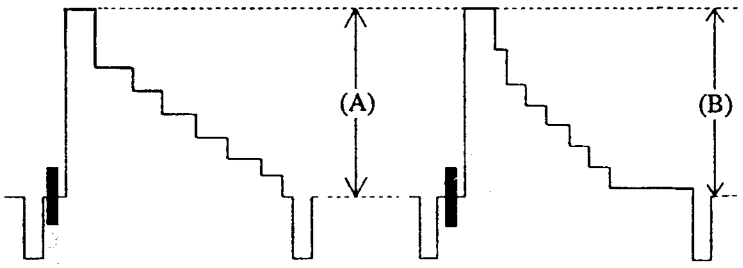
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP21 (on VIDEO 2 P.C.BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR14 (C FREQ)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
Step 1. 1. Extend the VIDEO 1 P.C.BOARD. 2. Set the FREQUENCY and VOLTS AMPLITUDE DIAL of sinewave Generator so that the output frequency is 5.4MHz ± 0.01MHz (0.3 ~ 0.4Vp-p). 3. Inject the Sinewave signal (5.4MHz ± 0.01MHz) to TP17 (on VIDEO 1 P.C.BOARD).	FREQUENCY SETTING TO: 5.4MHz ± 0.01 MHz (0.3 ~ 0.4Vp-p)
Step 2. 1. Insert a Blank Tape, and place the unit in the record mode. 2. Turn VR14 (C FREQ) from the full counterclockwise position to the full clockwise position slowly while in record. 3. SCOPE : TP21 (on VIDEO 2 P.C.BOARD) 4. Play back the just recorded portion. 5. Find where the frequency beat noise becomes minimized at the Pr signal portion as shown. 6. Set VR14 so that the beat noise is minimized at Pr signal portion as shown.	TP21 (on VIDEO 2 P.C.BOARD)  Expand Minimize The BEAT Pay attention to this portion

10-9. Y DEVIATION ADJUSTMENT

(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY OR SELF REC/PB	BLANK ■ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR2 (Y DEV)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
Step 1. 1. SCOPE : COMPONENT Y OUT (W/75ohm Termination) 2. Play back the 100% colour bar portion of Alignment Tape. 3. Measure the level (A).	
Step 2. 1. Insert a Blank Tape, and place the unit in the record mode for few minutes. 2. Then, play back the just recorded portion. 3. Compare the Playback Signal Level (A) of Alignment Tape and the Level (B) of SELF REC/PLAYBACK Signal. 4. If it is not same level, adjust VR2 so that the SELF REC/PB level (B) becomes the same as the Play back level (A) of Alignment Tape as shown.	 PLAYBACK OUTPUT OF ALIGNMENT TAPE OUT PUT OF SELF REC/PLAYBACK SPECIFICATION: PLAYBACK SIGNAL LEVEL OF THE ALIGNMENT TAPE (A) = OUTPUT LEVEL OF SELF REC/PB (B) ± 1%
Note: After this adjustment, the Y WHITE & DARK CLIP ADJ. (10-10) are required.	

10-10. Y WHITE & DARK CLIP ADJUSTMENT

(VIDEO 1)

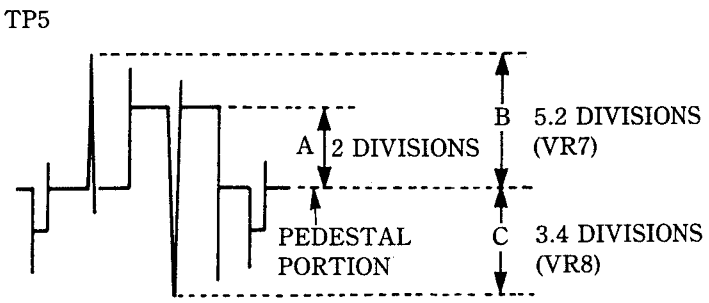
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP5	REC	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) 2T PULSE & BAR SIGNAL	VR7 (Y WC) VR8 (Y DC)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

Step 1.

1. SCOPE : TP5
2. Insert a Blank Tape, and place the unit in the record mode.
3. Set the BAR signal level (A) to 2 divisions on the OSCILLOSCOPE display (uncalibrated) as shown.
4. Adjust VR7 so that the 2T pulse (Positive Spike) level (B) is 5.2 divisions as shown.
5. Adjust VR8 so that the 2T pulse (Negative Spike) level (C) is 3.4 divisions as shown.



Note:

After this adjustment, set the "variable level" of the OSCILLOSCOPE back to the calibrated position.

10-11. C DEVIATION ADJUSTMENT

(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb OUT (W/75ohm Termination) (on JACK PANEL BOARD)	PLAY OR SELF REC/PB	BLANK ■ TAPE ALIGNMENT ■ TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR11 (C DEV)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

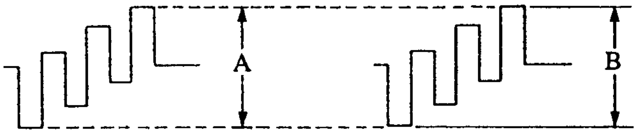
Refer to the SECTION 10-1.

Step 1.

1. SCOPE : COMPONENT Pb OUT (W/75ohm Termination)
2. Play back the 100% colour bar portion of Alignment Tape.
3. Measure the level (A).

Step 2.

1. Insert a Blank Tape, and place the unit in the record mode for few minutes.
2. Then, playback the just recorded portion.
3. Compare the Playback Signal Level (A) of Alignment Tape and the Level (B) of SELF REC/PLAYBACK Signal.
4. If it is not same level, adjust VR11 so that the SELF REC/PLAYBACK Level (B) becomes the same as the Playback Level (A) of Alignment Tape as shown.



PLAYBACK OUTPUT OF THE ALIGNMENT TAPE

OUTPUT OF SELF REC/PLAYBACK

SPECIFICATION:
PLAYBACK SIGNAL LEVEL OF THE ALIGNMENT TAPE (A)
= OUTPUT LEVEL OF SELF REC/PB (B) ± 1%

Note:
After this adjustment, the C POSITIVE & NEGATIVE ADJ.(10-12) are required.

10-12. C POSITIVE & NEGATIVE CLIP LEVEL ADJUSTMENT

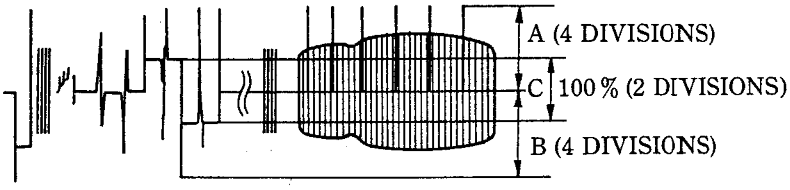
(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP13	REC	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) ·PULSE & BAT 3T ·60% H SWEEP	VR15 (C POS C) VR16 (C NEG C)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE : TP13
2. Insert a Blank Tape, and place the unit in the recording mode.
3. Input signal : PULSE & BAR 3T
4. Set the level (C) (from +BAR to -BAR) to 2 divisions on the OSCILLOSCOPE display (uncalibrated) as shown.
5. Adjust VR16 so that the NEGATIVE SPIKE PULSE level (B) is 4 divisions as shown.
6. Input signal : 60% H SWEEP
7. Adjust VR15 so that the POSITIVE SPIKE PULSE level (A) is 4 divisions as shown.



Note:
After this adjustment, set the "Variable level" of the OSCILLOSCOPE back to the calibrated position.

10-13. VIDEO METER ADJUSTMENT

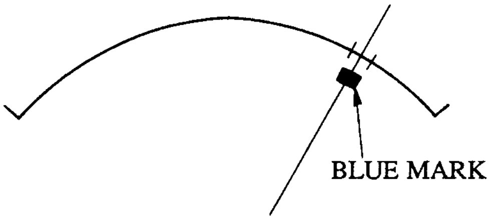
(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO/ TRACKING METER (on FRONT PANEL BOARD)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR9 (Y METER LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. Adjust VR9 so that the pointer of VIDEO/TRACKING METER is at the "0 VU" mark (within the blue area) as shown.



10-14. Y SUPER LIMITER ADJUSTMENT

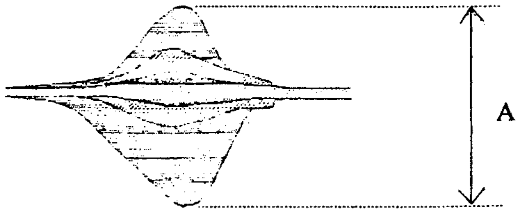
(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP6	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPOSITE 100% H.SWEEP	VR4 (Y SL LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE : TP6
2. SCOPE SETTING : 20 [μs/TIME]
3. Adjust VR4 so that the level (A) is 200mVp-p ± 40mVp-p as shown.

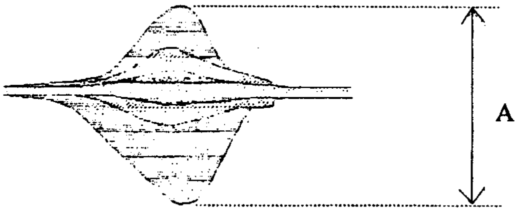


A = 200mVp-p ± 40mVp-p

10-15. C SUPER LIMITER ADJUSTMENT

(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP14	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% H.SWEEP	VR13 (C SL LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE : TP14 2. SCOPE SETTING : 20 [μs/TIME] 3. Adjust VR13 so that the level (A) is 200mVp-p ± 40mVp-p as shown.	 A = 200mVp-p ± 40mVp-p

10-16. Y CH1 & CH2 RECORDING CURRENT ADJUSTMENT

(VIDEO 1)

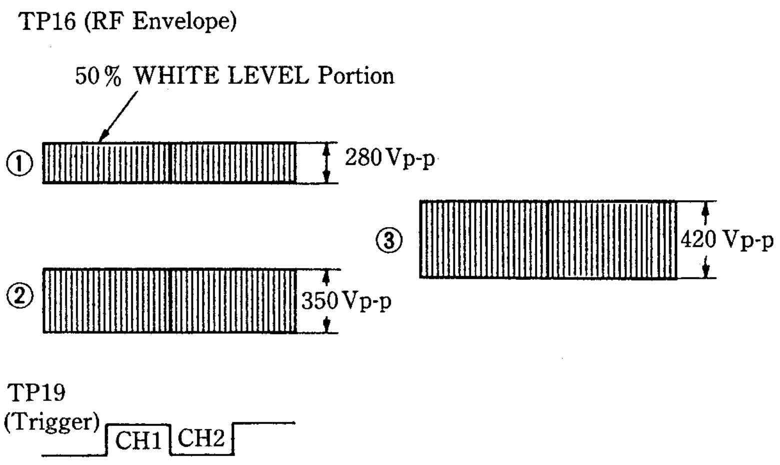
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP16 TP20 TP19	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	[CH1] VR18 (Y2 CURR) [CH2] VR17 (Y1 CURR)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

Step 1.

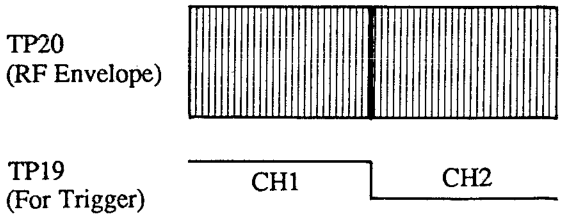
1. SCOPE CH1 : TP16 (RF envelope)
   CH2 : TP19 (For Trigger)
2. Place the unit in the record mode.
3. Turn VR18 (CH1) and VR17 (CH2) so that the FM carrier level of the 50% white signal varies from 280mVp-p, to 350mVp-p and 420mVp-p. Record each level for about 10 seconds each.


TP16 (RF Envelope)
50% WHITE LEVEL Portion
①
280Vp-p
③
420 Vp-p
②
350Vp-p
TP19
(Trigger)
CH1
CH2

Step 2.

1. SCOPE CH1 : TP20 (RF envelope)
   CH2 : TP19 (For Trigger)
2. Play back the just recorded portions from Step 1.
3. Find the maximum play back level from each playback level during the playback mode.
4. SCOPE CH1 : TP16 (RF envelope)
   CH2 : TP19 (For Trigger)
5. Adjust VR18 (CH1) and VR17 (CH2) so that the RF level set up the recording current value (280mVp-p, 350mVp-p or 420mVp-p for maximum playback level at TP20.

Note:
If the maximum playback level is all the same level (±1.5%) at TP20, adjust VR18 (CH1) and VR17 (CH2) to the lower RF level point (280mVp-p) at TP16.


TP20
(RF Envelope)
TP19
(For Trigger)
CH1
CH2

10-17. C CH1 & CH2 RECORDING CURRENT ADJUSTMENT

(VIDEO 1)

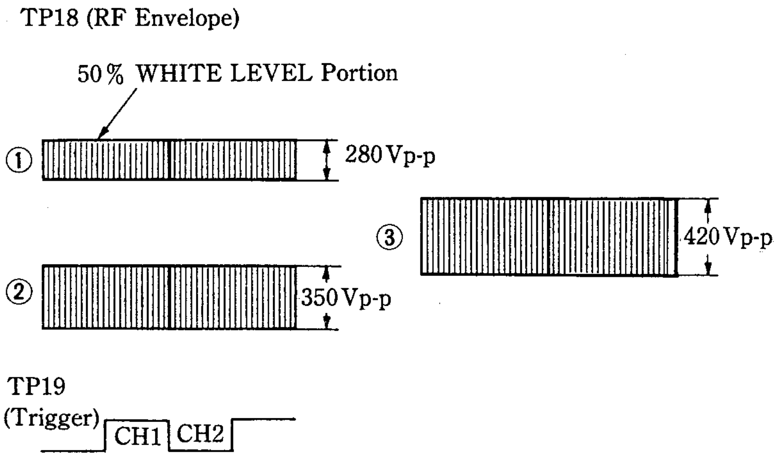
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP18 TP21 TP19	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	[CH1] VR20 (C2 CURR) [CH2] VR19 (C1 CURR)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

Step 1.

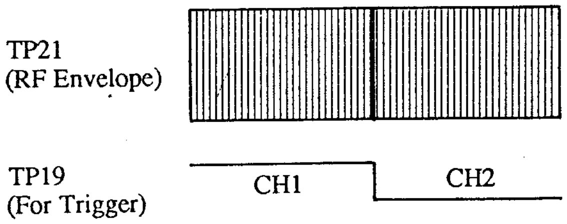
1. SCOPE CH1 : TP18 (RF envelope)
   CH2 : TP19 (For Trigger)
2. Place the unit in the record mode.
3. Turn VR20 (CH1 and VR19 (CH2) so that the FM carrier level of the 50% white signal varies from 280mVp-p, to 350mVp-p and 420mVp-p. Record the level for about 10 seconds each.


TP18 (RF Envelope)
50% WHITE LEVEL Portion
①
280Vp-p
③
420Vp-p
②
350Vp-p
TP19
(Trigger)
CH1
CH2

Step 2.

1. SCOPE CH1 : TP21 (RF envelope)
   CH2 : TP19 (For Trigger)
2. Play back the just recorded portions from Step 1.
3. Find the maximum playback level from each playback level during the playback mode.
4. SCOPE CH1 : TP18 (RF envelope)
   CH2 : TP19 (For Trigger)
5. Adjust VR20 (CH1) and VR19 (280mVp-p, 350mVp-p and 420mVp-p) for maximum playback level at TP21.

Note:
If the maximum playback level is all the same level (± 1.5%) at TP21, adjust VR20 (CH1) and VR19 (CH2) to the lower RF level point (280mVp-p) at TP18.


TP21
(RF Envelope)
TP19
(For Trigger)
CH1
CH2

10-18. Y HEAD AMP OUTPUT BALANCE ADJUSTMENT

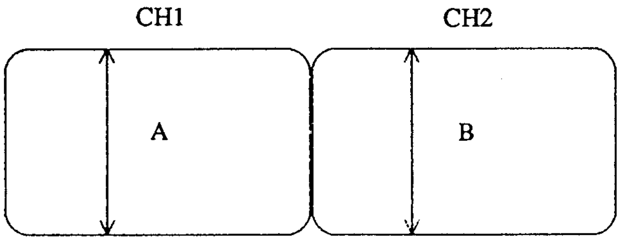
(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP20 TP19	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	VR21 (Y PB BAL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE CH1 : TP20 (Y RF envelope)
   CH2 : TP19 (For Trigger)
2. Insert a Blank Tape.
3. Place the unit in the record mode, and then playback the just recorded portion.
4. Adjust VR21 so that the RF envelope levels of CH1 and CH2 are same as shown.



SPECIFICATION : A = B

10-19. C HEAD AMP OUTPUT BALANCE ADJUSTMENT

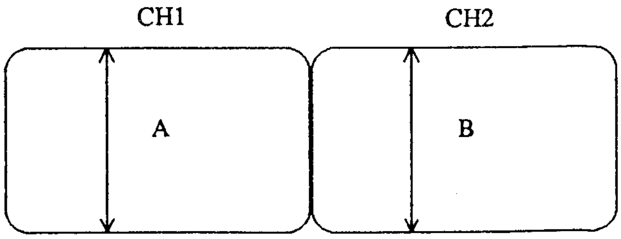
(VIDEO 1)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP21 TP19	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	VR22 (C PB LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE CH1 : TP21 (C RF envelope)
   CH2 : TP19 (Trigger)
2. Insert a Blank Tape.
3. Place the unit in the record mode, and then playback the just recorded portion.
4. Adjust VR22 so that the RF envelope levels of CH1 and CH2 are same as shown.



SPECIFICATION : A = B

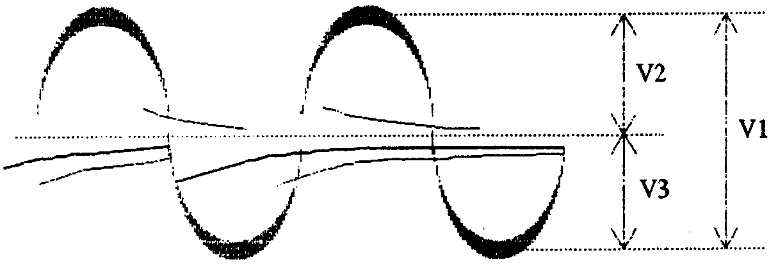
10-20. Y NON-LINEAR DE-EMPHASIS LIMITER LEVEL ADJUSTMENT

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP10	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% BOW TIE	VR14 (Y LIM LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE SETTING : DC mode
2. Insert a Blank Tape.
3. Place the unit in the record mode, and then playback the just recorded portion.
4. SCOPE : TP10
5. Adjust VR14 so that the V1 level is 360mVp-p ± 5mVp-p as shown.
6. Confirm the V2 and V3 ratio become almost the same as shown.



V1 = 360mVp-p ± 5mVp-p
V2 = V3 (CONFIRMATION)

10-21. C NON-LINEAR DE-EMPHASIS LIMITER LEVEL ADJUSTMENT

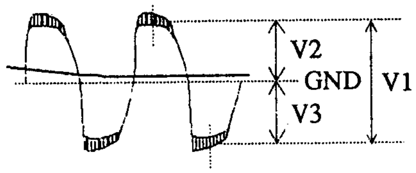
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP22	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% BOW TIE	VR30 (C LIM LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE SETTING : DC mode
2. Insert a Blank Tape.
3. Place the unit in the record mode, and then playback the just recorded portion.
4. SCOPE : TP20
5. Adjust VR30 so that the V1 level of Pb signal is 400mVp-p ± 5mVp-p as shown.
6. Confirm the V2 and V3 ratio become almost the same as shown.

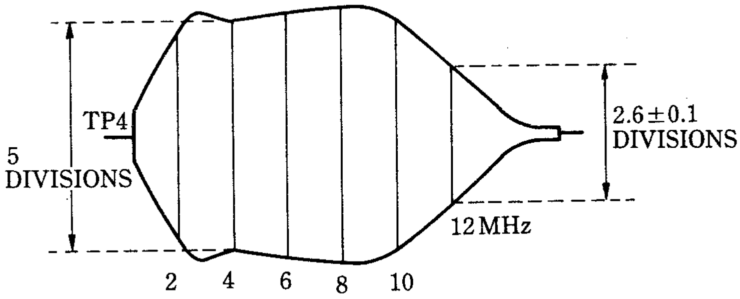


V1 = 400mVp-p ± 5mVp-p
V2 = V3 (CONFIRMATION)

10-22-1. Y EQ2 ADJUSTMENT

(VIDEO 2)

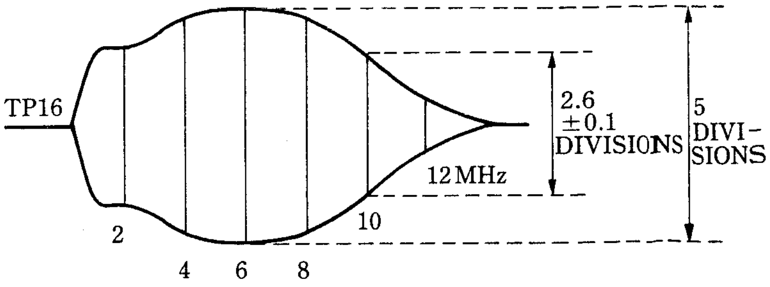
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP4 TP6	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE RF SWEEP PORTION	OSCILLOSCOPE	---------	VR6 (Y CH1 EQ2) VR7 (Y CH2 EQ2)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE CH1 : TP4 SCOPE CH2 : TP6 (For Trigger) 2. Insert the Alignment tape, and playback the RF sweep portion. 3. Adjust VR6 and VR7 (CH1 and CH2) so that the frequency response is as shown below. 4 MHz level = 100% (Reference) 12MHz level = 52%±2%	 TP4 5 DIVISIONS 2.6±0.1 DIVISIONS 12MHz 2 4 6 8 10 SPECIFICATION : 4MHz : 12MHz = 100% : 52% ± 2%

10-22-2. C EQ2 ADJUSTMENT

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP16 TP6	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE RF SWEEP PORTION	OSCILLOSCOPE	---------	VR22(C CH1 EQ2) VR23(C CH2 EQ2)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE CH1 : TP16 SCOPE CH2 : TP6 (For Trigger) 2. Insert the Alignment tape, and playback the RF sweep portion. 3. Adjust VR22 and VR23 (CH1 and CH2) so that the frequency response is as shown below. 6 MHz level = 100% (Reference) 10MHz level = 52%±2%	 TP16 2.6 ±0.1 DIVISIONS 5 DIVISIONS 12MHz 2 4 6 8 10 SPECIFICATION : 6MHz : 10MHz = 100% : 52% ± 2%

10-23. Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (FINE)

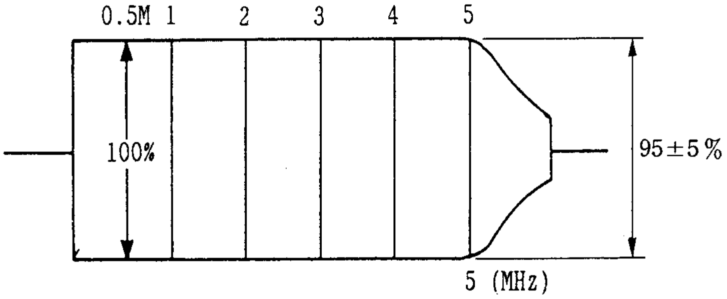
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination) (on JACK PANEL BOARD) TP19	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE SWEEP PORTION	WAVEFORM MONITOR OR OSCILLOSCOPE	---------	VR3 (Y CH1 EQ1) VR4 (Y CH2 EQ1) VR5 (Y TERM) VR8 (Y EQ3)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE CH1 : COMPONENT Y OUT (W/75Ω Termination)
   SCOPE CH2 : TP18 (For Trigger)
2. Insert the Alignment tape, and playback the SWEEP portion.
3. Adjust VR3 (CH1) and VR4 (CH2) so that the frequency response are as shown.
4. Fine adjust VR8 so that the frequency response waveform at 2~3MHz is as flat as possible.
5. Turn VR5 counterclockwise so that the frequency response waveform at high frequency area is minimum. Then turn VR5 clockwise slowly and stop at the first point where the frequency response waveform over 3MHz becomes flat.



SPECIFICATION : 0.5MHz = 100% (Reference)
5.0MHz = 95% ± 5%

10-24. C PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (FINE)

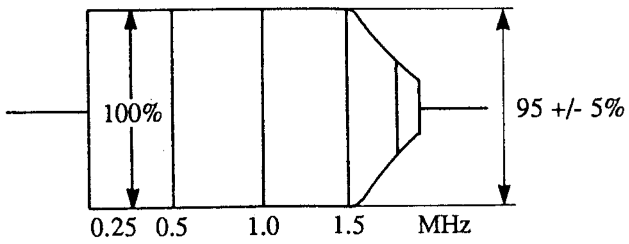
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb (Pr) OUT TP19	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE SWEEP PORTION	WAVEFORM MONITOR OR OSCILLOSCOPE	---------	VR21 (C TERM) VR22 (C CH1 EQ2) VR23 (C CH2 EQ2) VR24 (C EQ3)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE CH1 : COMPONENT Pb (Pr) OUT (W/75ohm Termination)
   SCOPE CH2 : TP19
2. Insert the Alignment tape, and play back the SWEEP portion.
3. Adjust VR24 so that the frequency response is maximum as possible.
4. Adjust VR21 so that the frequency response of CH1 & CH2 are shown. If the frequency fesponse is unbalance between CH1 & CH2, adjust VR21 so that the average frequency response of both channels is shown. Then adjust VR22 (CH1) and VR23 (CH2) to compensate each channel.



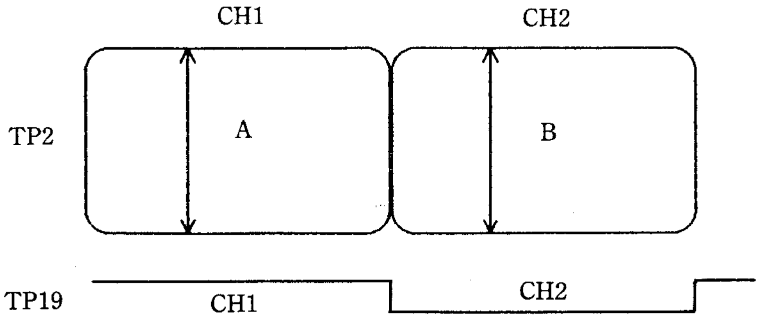
SPECIFICATION:
0.25MHz = 100% (Reference)
1.5MHz = 95% ± 5%

10-25. Y PLAYBACK RF LEVEL ADJUSTMENT (FINE)

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP2 TP19	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPOSITE 50% WHITE	VR1 (Y RF LEV) (on VIDEO 2 P.C.BOARD) VR21 (Y PB BAL) (on VIDEO 1 P.C.BOARD)

ADJUSTMENT PROCEDURE & SPECIFICATION

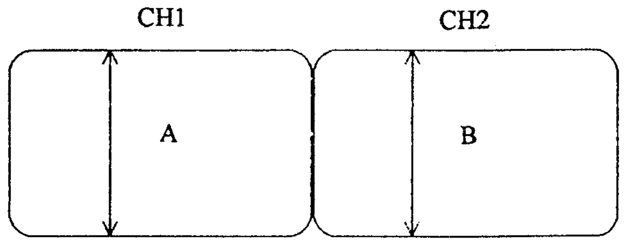
MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE CH1 : TP2 SCOPE CH2 : TP19 (For Trigger) 2. Insert a Blank Tape, and place the unit in the record mode. 3. Playback the just recorded portion. 4. Adjust VR1 so that the Y RF level is 300mVp-p ± 20mVp-p as shown. 5. Confirm that the RF levels of CH1 and CH2 are same as shown. 6. If it is not, readjust VR21 and repeat the #2, #3, #4, and #5.	 SPECIFICATION : A = B = 300mVp-p ± 20mVp-p

10-26. Y PLAYBACK LIMITER IN RF LEVEL ADJUSTMENT (FINE)

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP4 TP19	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	VR9 (Y LIM IN RF LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE CH1 : TP4 SCOPE CH2 : TP19 (For Trigger) 2. Insert a Blank Tape, and place the unit in the record mode. 3. Play back the just recorded portion. 4. Adjust VR9 so that the Y LIMITER RF level is 300mVp-p ± 20mVp-p as shown.	 SPECIFICATION : A = B = 300mVp-p ± 20mVp-p

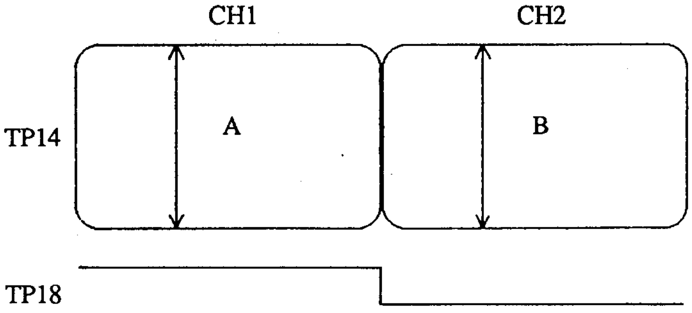
10-27. C PLAYBACK RF LEVEL ADJUSTMENT (FINE)

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP14 TP19	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	VR20 (C RF LEV) (on VIDEO 2 P.C.BOARD) VR22 (C PB BAL) (on VIDEO 1 P.C.BOARD)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE CH1 : TP14
   SCOPE CH2 : TP19 (For Trigger)
2. Insert a Blank Tape, and place the unit in the record mode.
3. Play back the just recorded portion.
4. Adjust VR20 so that the C RF level is 300mVp-p ± 20mVp-p as shown.
5. Confirm that the RF levels of CH1 and CH2 are same as shown.
6. If it it not, readjust VR22 and repeat the #2, #3, #4 and #5.

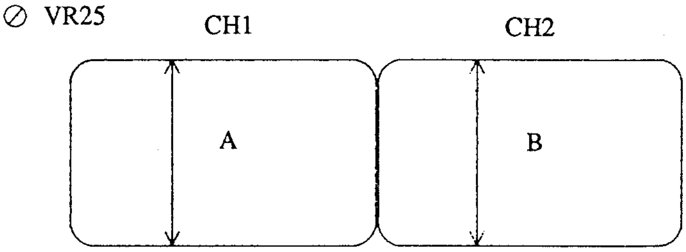


SPECIFICATION : A = B = 300mVp-p ± 20mVp-p

10-28. C PLAYBACK LIMITER IN RF LEVEL ADJUSTMENT (FINE)

(VIDEO 2)

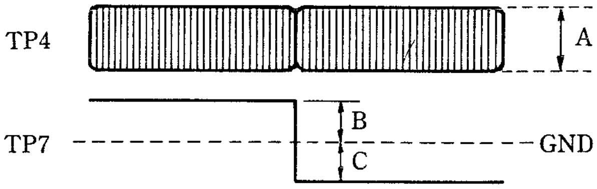
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP16 TP19	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	VR25 (C LIM IN RF LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE CH1 : TP16 SCOPE CH2 : TP19 (For Trigger) 2. Insert a Blank Tape, and place the unit in the record mode. 3. Play back the just recorded portion. 4. Adjust VR25 so that the C LIMITER RF level is 300mVp-p ± 20mVp-p as shown.	 SPECIFICATION : A = B = 300mVp-p ± 20mVp-p

10-29. Y D.O. DETECTION LEVEL ADJUSTMENT

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP4 TP7 TP6 (For Trigger)	SELF REC/PB (STILL)	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	VR10 (Y DOC DET) VR1 (Y RF LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 10-1.
1. SCOPE CH1 : TP4 SCOPE CH2 : TP7 SCOPE EXT IN : TP6 (For Trigger) 2. Insert a Blank Tape, and place the unit in the record mode. 3. Playback the just recorded portion. 4. Adjust VR1 so that the areage RF level (A) of both channels is 55mVp-p ± 5mVp-p as shown. 5. Observe TP7 at AC mode and adjust VR10 so that level (B) is equal to level (C). 6. Adjust VR1 again so that the RF level (A) of both channels is 300mVp-p ± 20mVp-p as shown in Figure of Adj. 10-26.	 SPECIFICATION : A = 55mVp-p ± 5mVp-p B = C

10-30. C D.O. DETECTION LEVEL ADJUSTMENT

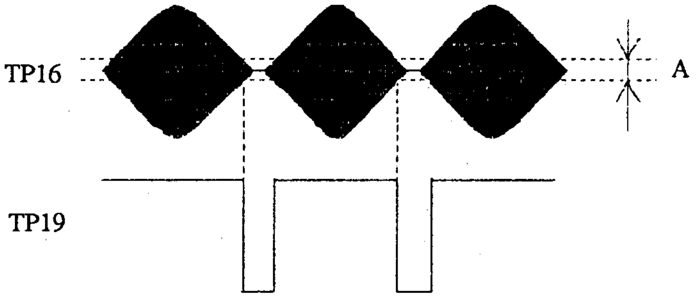
(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP16 TP19 TP6 (For Trigger)	SELF REC/PB (STILL)	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 50% WHITE	VR26 (C DOC DET)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

1. SCOPE CH1 : TP16
   SCOPE CH2 : TP19
   SCOPE EXT IN : TP6 (For Trigger)
2. Insert a Blank Tape, and place the unit in the record mode.
3. Playback the just recorded portion and then place the unit in the STILL mode.
4. Adjust VR26 so that the D.O. pulses appear when the (A) level of TP16 is 55mVp-p ± 5mVp-p as shown.



SPECIFICATION : A = 55mVp-p ± 5mVp-p

10-31. Y SELF RECORDING/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

(VIDEO 1)

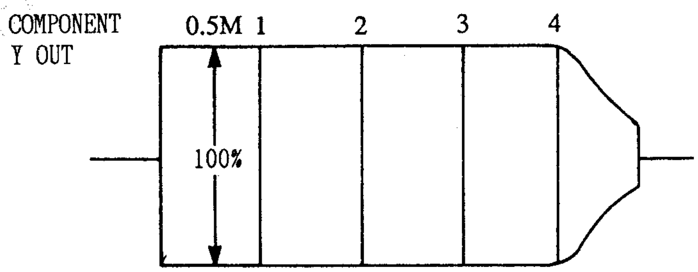
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (on JACK PANEL BOARD) TP16 TP19	SELF REC/PLAY	■ BLANK TAPE ☐ ALIGNMENT TAPE	WAVEFORM MONITOR OR OSCILLOSCOPE	(CAMERA IN) COMPONENT 60% H.SWEEP	[CH1] VR18 (Y2 CURR) VC2 (Y2 EQ) [CH2] VR17 (Y1 CURR) VC1 (Y1 EQ)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

Step 1.

1. Insert a Blank Tape, and place the unit in the record mode.
2. Then playback the just recorded portion.
3. SCOPE CH1 : COMPONENT Y OUT (W/75ohm Termination)
   SCOPE CH2 : TP19 (For Trigger)
4. Confirm that the Frequency Response is:
   0.5MHz = 100%
   5MHz = 95% ± 5%
5. If it is not within the specification, the following is required. (Step 2. or Step 3.)



SPECIFICATION : 0.5MHz = 100%
5MHz = 95% ± 5%

Step 2.

FREQUENCY RESPONSE LEVEL IS TOO HIGH AT 5.0MHz PORTION.

1) SCOPE : TP16
   TP19 (For Trigger)
2) Note the RF Level at TP16.
3) Turn VC2 (CH1) and VC1 (CH2) slightly to increase the RF Level at TP16.
4) Adjust VR18 (CH1) and VR17 (CH2) so that the RF Level matches the noted RF Level from #2 above.

Step 3.

FREQUENCY RESPONSE IS TOO LOW AT 5.0MHz PORTION.

1) SCOPE : TP16
   TP19 (For Trigger)
2) Note the RF Level at TP16.
3) Turn VC2 (CH1) and VC1 (CH2) slightly to decrease the RF Level at TP16.
4) Adjust VR18 (CH1) and VR17 (CH2) so that the RF Level matches the noted RF Level in #2 above.

Step 4.

1. Finally confirm the Y Self Rec/PB Frequency Response. (Go to Step 1.)
2. If it is not within specification, repeat Step 2. or Step 3.

10-32. C SELF RECORDING/PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

(VIDEO 1)

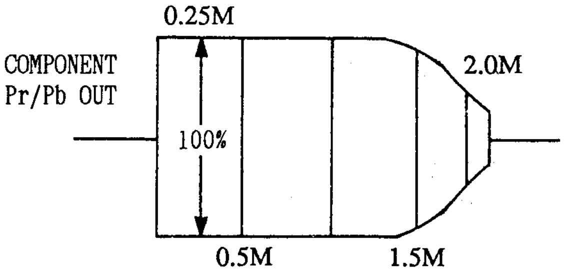
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb (Pr) OUT (on JACK PANEL BOARD) TP18 TP19	SELF REC/PLAY	■ BLANK TAPE ☐ ALIGNMENT TAPE	WAVEFORM MONITOR OR OSCILLOSCOPE	(CAMERA IN) COMPONENT 60% H.SWEEP	[CH1] VR20 (C2 CURR) VC4 (C2 EQ) [CH2] VR19 (C1 CURR) VC3 (C1 EQ)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

Step 1.

1. Insert a Blank Tape, and place the unit in the record mode.
2. Then playback the just recorded portion.
3. SCOPE CH1 : COMPONENT Pb OUT (W/75ohm Termination)
   SCOPE CH2 : TP19 (For Trigger)
4. Confirm that the Frequency Response is:
   0.25MHz = 100%
   1.5MHz = 95% ± 5%
5. If it is not within the specification, the following is required. (Step 2. or Step 3.)



SPECIFICATION : 0.25MHz = 100% (Reference)
1.5MHz = 95% ± 5%

Step 2.

FREQUENCY RESPONSE LEVEL IS TOO HIGH AT 1.5MHz PORTION.

1) SCOPE : TP18
   TP19 (For Trigger)
2) Note the RF Level at TP18.
3) Turn VC4 (CH1) and VC3 (CH2) slightly to increase the RF Level at TP18.
4) Adjust VR20 (CH1) and VR19 (CH2) so that the RF Level matches the noted RF Level in #2.

Step 3.

FREQUENCY RESPONSE IS TOO LOW AT 1.5MHz PORTION.

1) SCOPE : TP18
   TP19 (For Trigger)
2) Note the RF Level at TP18.
3) Turn VC4 (CH1) and VC3 (CH2) slightly to decrease the RF Level at TP18.
4) Adjust VR20 (CH1) and VR19 (CH2) so that the RF Level matches the noted RF Level in #2.

Step 4.

1. Finally confirm the C self Rec/PB Frequency Response. (Go to Step 1.)
2. If it is not within specification, repeat Step 2 or Step 3.

10-33. Y SELF RECORDING K-FACTOR CONFIRMATION

(VIDEO 2)

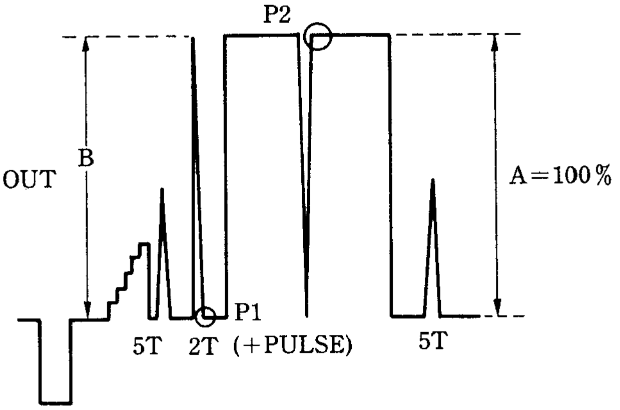
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (on JACK PANEL BOARD)	SELF REC/PLAY	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	WAVEFORM MONITOR	(CAMERA IN) COMPONENT SIN² 2T PULSE & BAR	VR8 (Y EQ3)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 10-1.

Step 1.

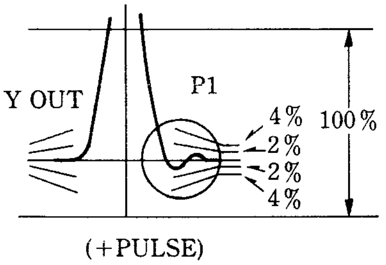
1. SCOPE : COMPONENT Y OUT (W/75ohm Termination)
2. Insert a Blank Tape, and place the unit in the record mode.
3. Playback the just recorded portion.
4. Confirm that the pulse shape level is:
   A = 100% (reference)
   B = 100 ± 6%
5. If it is not, readjust VR8 to satisfy the specification.



SPECIFICATION : A : B = 100% : 100 ± 6%

Step 2.

1. Expand the P1 portion.
2. Set the Uncal on WAVEFORM MONITOR that B portion level becomes 100%.
3. Set the Uncal on WAVEFORM MONITOR that the pulse width of 50% point becomes pulse portion.
4. Confirm that the pulse shape is within 1.5%.
5. If it is not, readjust VR8 to satisfy the specification.



SPECIFICATION : PULSE SHAPE = WITHIN 1.5%

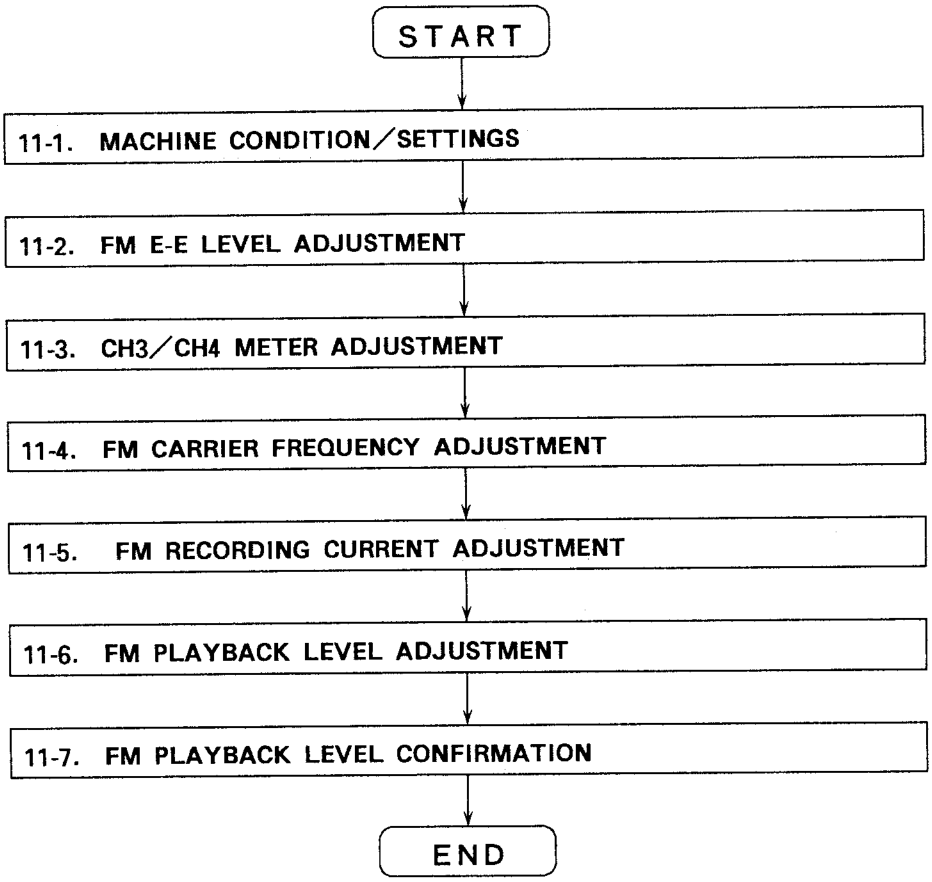
Step 3.

Repeat the Step 1 and Step 2 until the specifications are satisfied.

Note:
Confirm the Y PLAYBACK FREQUENCY RESPONSE ADJUSTMENT (FINE) (SECTION 10-23) when you readjust VR8.

11. AUDIO BOARD (2/2) -FM AUDIO SECTION-

FM AUDIO SECTION FLOWCHART


START
11-1. MACHINE CONDITION/SETTINGS
11-2. FM E-E LEVEL ADJUSTMENT
11-3. CH3/CH4 METER ADJUSTMENT
11-4. FM CARRIER FREQUENCY ADJUSTMENT
11-5. FM RECORDING CURRENT ADJUSTMENT
11-6. FM PLAYBACK LEVEL ADJUSTMENT
11-7. FM PLAYBACK LEVEL CONFIRMATION
END

11-1. MACHINE CONDITION SETTING

1. Set the switches on the Front Panel as shown unless specified.

MODE -- EE/PB
DOLBY NR -- OFF
CH1 CH2 (AGC) -- MANUAL
METER SELECT -- CH4
REC/PB VR -- PRESET

2. Set the switches on the Jack Panel as shown unless specified.

VIDEO INPUT SELECT -- CAMERA IN
COMPONENT/YC/COMPOSITE SELECT ----------------------------- COMPONENT
AUDIO INPUT CH1 TO CH4 SELECT ----------------------------- LINE
CH3/CH4 AUDIO INPUT LEVEL ----------------------------- +0dBu
AUDIO OUTPUT SELECT -- FM
AUDIO OUTPUT LEVEL -- +0dBu
MON/CH1, CH3 -- CH1/3
TRACKING VR ------------------------------------ FIXED POSITION

11-2. FM E-E LEVEL ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH3 LINE OUT CH4 LINE OUT (on JACK PANEL BOARD)	EJECT	BLANK ☐ TAPE	VTVM	(CAMERA IN) 50% FLAT FIELD	VR603 (CH3 LINE OUT) VR703 (CH4 LINE OUT)
		ALIGNMENT ☐ TAPE		(AUDIO IN) 1KHz SINEWAVE SIGNAL AT +0dBu TO CH3/CH4 LINE INPUTS	

ADJUSTMENT PROCEDURE & SPECIFICATION

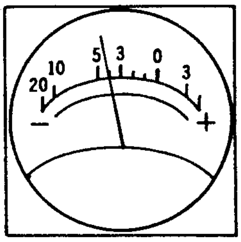
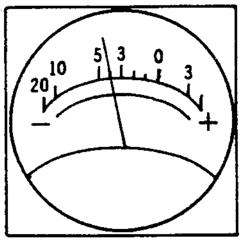
MACHINE CONDITION	Refer to the SECTION 11-1.
1. Connect the VTVM to the LINE OUT of CH3 and CH4. 2. Adjust VR603 and VR703 so that the output level is 0dBu ± 0.1dB.	SPECIFICATION : +0dBu ± 0.1dB

11-3. CH3/CH4 METER ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH3 METER CH4 METER (on FRONT PANEL BOARD)	REC	BLANK ■ TAPE ALIGNMENT ☐ TAPE	---------	(CAMERA IN) 50% FLAT FIELD (AUDIO IN) 1KHz SINEWAVE SIGNAL AT +0dBu TO CH3/CH4 LINE IN INPUTS	VR604 (CH3 LEVEL) VR704 (CH4 LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 11-1.
1. Insert the Blank Tape, and place the unit in the recording mode. 2. Adjust VR604 (CH3) and VR704 (CH4) so that the level is -4VU shown on the meter.	CH3 METER  CH4 METER 

11-4. FM CARRIER FREQUENCY ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP601 (CH3) TP701 (CH4)	EJECT	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	FREQUENCY COUNTER	(CAMERA IN) 50% FLAT FIELD (AUDIO IN) NOT SIGNAL	VR601 (CH3 CARRIER) VR701 (CH4 CARRIER)

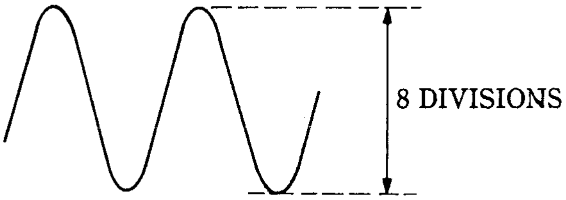
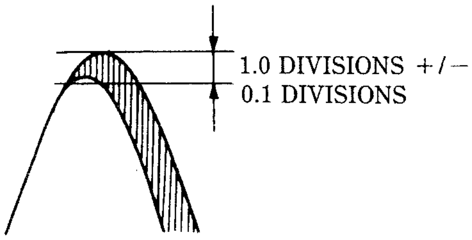
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 11-1.
1. SCOPE : TP601 (CH3) SCOPE : TP701 (CH4) 2. Adjust VR601 (CH3) and VR701 (CH4) so that the carrier frequency is as shown below. TP601 = 400KHz ± 1KHz TP701 = 700KHz ± 1KHz	SPECIFICATION : TP601 = 400KHz ± 1KHz TP701 = 700KHz ± 1KHz

11-5. FM RECORDING CURRENT ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP17 (on VIDEO 1 P.C.BOARD)	REC	■ BLANK TAPE	OSCILLOSCOPE	(CAMERA IN) 50% FLAT FIELD	VR801 (FM CARR MIX)
		☐ ALIGNMENT TAPE		(AUDIO IN) NOT SIGNAL	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 11-1. 2. The C REC CURRENT ADJ. should be completed.
Step 1. OSCILLOSCOPE SETTING	BAND WIDTH FILTER = OFF VOLTS/DIV. = 10mVp-p TIME/DIV. = 50ns (0.1μs)
Step 2. 1. Insert a Blank Tape, and place the unit in the recording mode. 2. SCOPE : TP17 (on VIDEO 1 P.C.BOARD) 3. VR801 : turned Full counterclockwise 4. Adjust the Sinewave signal level of TP17 to 8 divisions (uncalibrated) on the scope.	
Step 3. 1. Adjust VR801 so that the FM carrier (A) level becomes 1.0 divisions ± 0.1 divisions as shown.	

11-6. FM PLAYBACK LEVEL ADJUSTMENT

(AUDIO)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH3 LINE OUT CH4 LINE OUT (on JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE 1KHz 0VU PORTION	VTVM	---------	VR602 (CH3 C.PB LEVEL) VR702 (CH4 C.PB LEVEL)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to SECTION 11-1.
1. SCOPE : CH3 LINE OUT CH4 LINE OUT 2. Playback the 1KHz (0VU) portion of the Alignment Tape. 3. Adjust VR602 (CH3) and VR702 (CH4) so that the LINE OUTPUT levels are +0dBu ± 0.1dB.	SPECIFICATION : CH3/CH4 LEVEL = +0dBu ± 0.1dB

11-7. FM PLAYBACK LEVEL CONFIRMATION

(AUDIO)

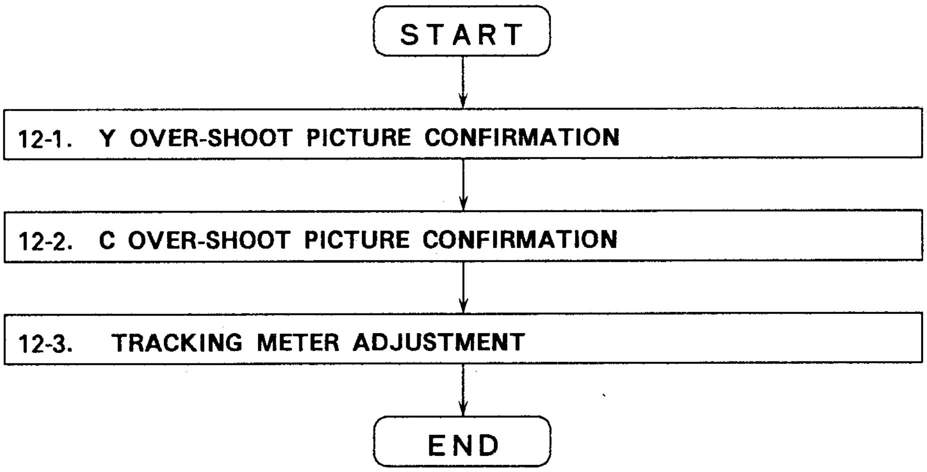
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
CH3 LINE OUT CH4 LINE OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE	VTVM	(CAMERA IN) 50% FLAT FIELD	VR602 (CH3 PB LEVEL) VR702 (CH4 PB LEVEL)
		ALIGNMENT ☐ TAPE		(AUDIO IN) 1KHz SINEWAVE SIGNAL AT +0dBu TO CH3 /CH4 LINE INPUT	

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	REFER TO THE SECTION 8-1.
Step 1. 1. SCOPE : CH3 / CH4 LINE OUT 2. Place the unit in record for a few minutes, and playback the just recorded portion. 3. Confirm that the CH3 and CH4 LINE OUTPUT LEVELS are +0dBu ± 0.3dB. 4. If it is not within specification, readjust VR602 (CH3) and VR702 (CH4), and repeat #1 to #3 until the OUTPUT LEVEL is +0dBu ± 0.3dB.	SPECIFICATION: CH3/CH4 LINE OUTPUT LEVEL = +0dBu ± 0.3dB
Step 2. 1. After this adjustment, confirm the FM E-E LEVEL ADJ. (9-2).	SPECIFICATION: CH3/CH4 E-E LEVEL = +0dBu ± 0.5dB

12. VIDEO 1 AND VIDEO 2 BOARD (2/2)

VIDEO 1 AND VIDEO 2 SECTION FLOWCHART


START
12-1. Y OVER-SHOOT PICTURE CONFIRMATION
12-2. C OVER-SHOOT PICTURE CONFIRMATION
12-3. TRACKING METER ADJUSTMENT
END

12-1. Y OVER-SHOOT CONFIRMATION

(VIDEO 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (on JACK PANEL BOARD)	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	MONITOR TV	(CAMERA IN) COMPONENT 100% SWEEP	-----------

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. VIDEO INPUT SELECT : CAMERA IN
Step 1. 1. Insert a Blank Tape, and place the unit in the record mode. 2. Play back the just recorded portion. 3. SCOPE : COMPONENT Y OUT 4. Confirm that an OVER MODULATED PICTURE does not occur on the TV MONITOR. 5. If an OVER MODULATED PICTURE occurs on the TV MONITOR, the following is required.	
Step 2. 1. Degauss the video heads. 2. When an OVER MODULATED PICTURE occurs on the TV MONITOR nevertheless, reconfirm Y EQ2 ADJ. (10-22-1).	VIDEO IN LEVEL KNOB : FIXED POSITION

12-2. C OVER-SHOOT CONFIRMATION

(VIDEO 1, 2)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	MONITOR TV	(CAMERA IN) COMPONENT 100% SWEEP	-----------

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. VIDEO INPUT SELECT : CAMERA IN 2. CAMERA INPUT SELECT : COMPONENT
Step 1. 1. SCOPE : COMPONENT Pb (Pr) OUT 2. MONITOR EXT SYNC IN : COMPONENT Y OUT (FOR TRIGGER)	
Step 2. 1. Insert a Blank Tape, and place the unit in the record mode. 2. Play back the just recorded portion. 3. Confirm that the Pb OUTPUT. An OVER MODULATED PICTURE should not occur at the TV MONITOR.	
Step 3. 1. Perform a confirmation for the Pr OUTPUT as well.	
Step 4. 1. If an OVER MODULATED PICTURE occurs on the TV MONITOR, the following is required. 2. Degauss the video heads. 3. When an OVER MODULATED PICTURE occurs on the TV MONITOR nevertheless, reconfirm C EQ2 ADJ. (10-22-2).	

12-3. TRACKING METER ADJUSTMENT

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TRACKING METER (on FRONT PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	---------	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR2 (RF METER LEV)

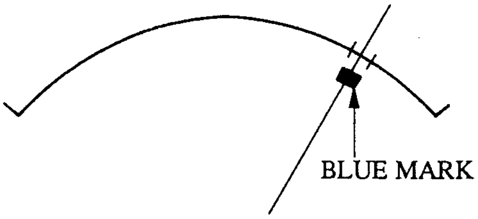
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	

1. METER SELECT switch : VIDEO・TRACKING meter
2. VIDEO INPUT SELECT : CAMERA IN
3. CAMERA INPUT SELECT : COMPONENT

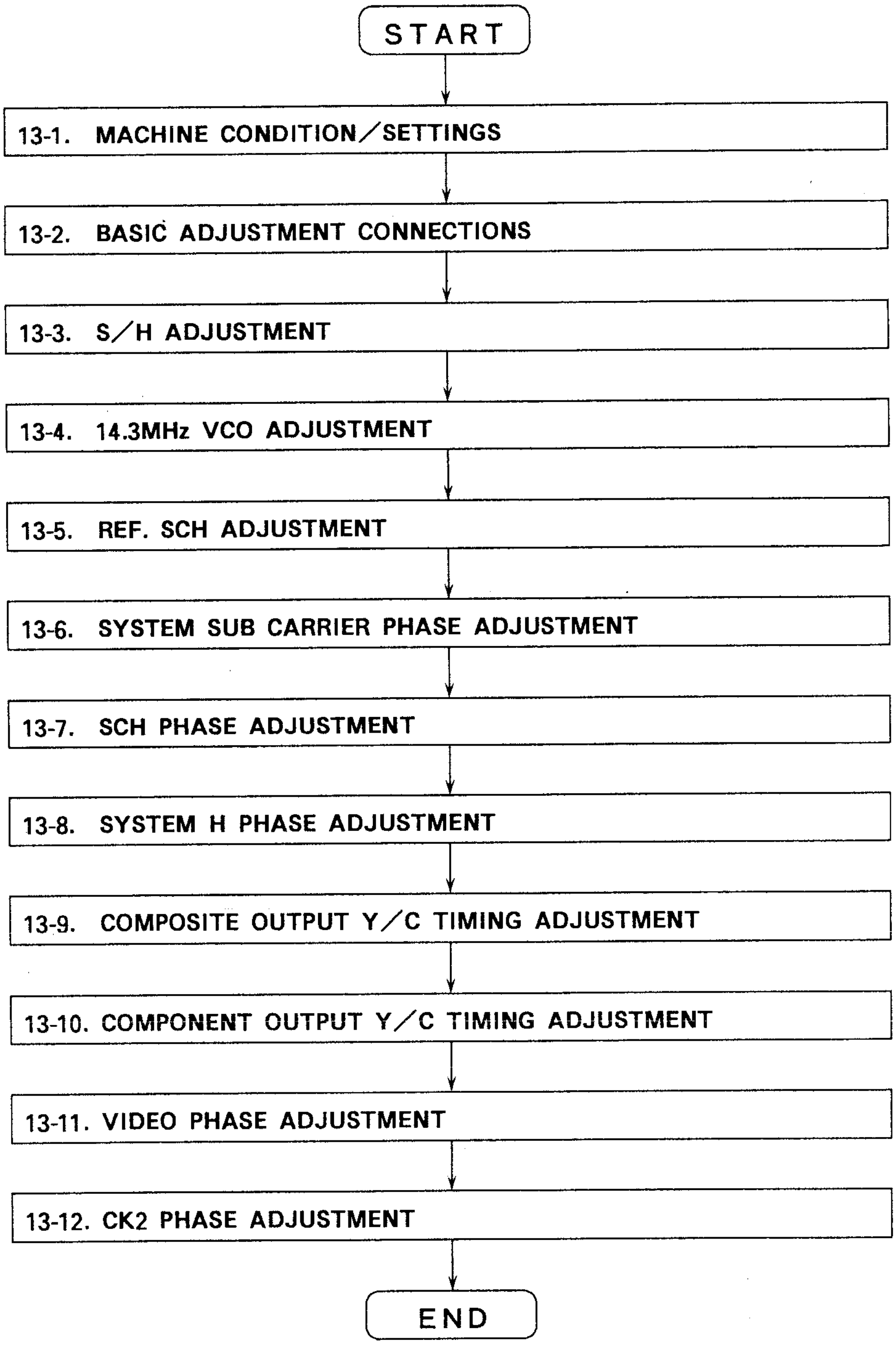
1. Insert a Blank Tape, and place the the unit in the record mode.
2. Play back the just recorded portion.
3. Adjust VR2 so that the pointer of TRACKING METER is "0 VU" mark (within the blue area) as shown.

TRACKING METER



13. VIDEO 3 AND VIDEO 4 BOARD (2/2)

VIDEO 3 AND VIDEO 4 SECTION FLOWCHART


START
13-1. MACHINE CONDITION/SETTINGS
13-2. BASIC ADJUSTMENT CONNECTIONS
13-3. S/H ADJUSTMENT
13-4. 14.3MHz VCO ADJUSTMENT
13-5. REF. SCH ADJUSTMENT
13-6. SYSTEM SUB CARRIER PHASE ADJUSTMENT
13-7. SCH PHASE ADJUSTMENT
13-8. SYSTEM H PHASE ADJUSTMENT
13-9. COMPOSITE OUTPUT Y/C TIMING ADJUSTMENT
13-10. COMPONENT OUTPUT Y/C TIMING ADJUSTMENT
13-11. VIDEO PHASE ADJUSTMENT
13-12. CK2 PHASE ADJUSTMENT
END

13-1. MACHINE CONDITION SETTING

(VIDEO 3)

Set the switches on the Front Panel of follows unless specified.

MODE -- EE/PB
METER SELECT -------------------------------------- VIDEO・TRACKING

Set the switches on the Jack Panel of follows unless specified.

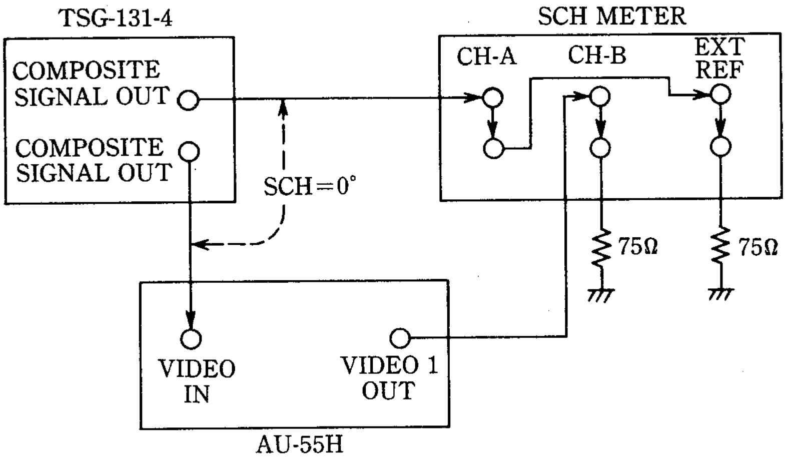
VIDEO INPUT SELECT ------------------------------------- VIDEO IN
TRACKING VR ------------------------------------- FIXED POSITION
VIDEO IN LEVEL ------------------------------------- FIXED POSITION

13-2. BASIC ADJUSTMENT CONNECTIONS

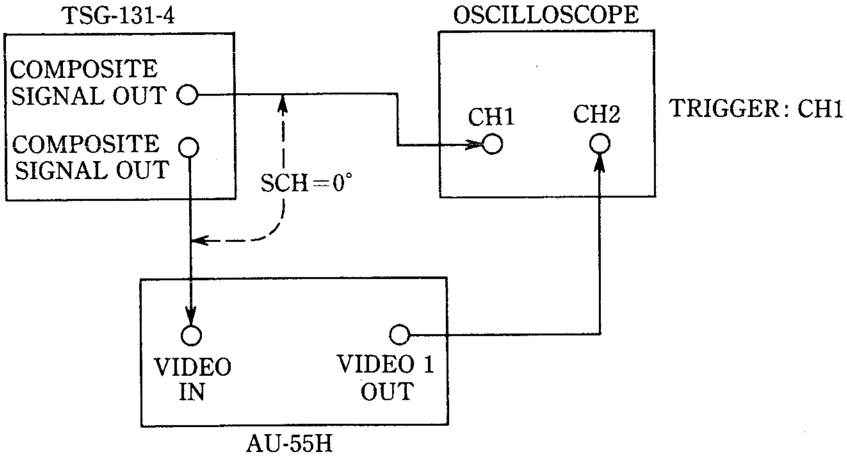
(VIDEO 3)

Basic connection method is as shown below.

A


TSG-131-4
COMPOSITE SIGNAL OUT
COMPOSITE SIGNAL OUT
SCH=0°
SCH METER
CH-A
CH-B
EXT REF
75Ω
75Ω
VIDEO IN
VIDEO 1 OUT
AU-55H

B

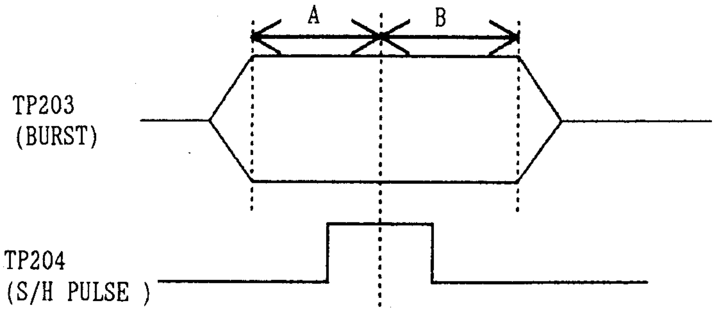

TSG-131-4
COMPOSITE SIGNAL OUT
COMPOSITE SIGNAL OUT
SCH=0°
OSCILLOSCOPE
CH1
CH2
TRIGGER: CH1
VIDEO IN
VIDEO 1 OUT
AU-55H

13-3. S/H ADJUSTMENT

(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP203 TP204	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR201 (S/H PULSE)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 13-1.
1. SCOPE SETTING : DELAY mode (0.5μs/TIME) 2. SCOPE CH1 : TP203 SCOPE CH2 : TP204 (Trigger) 3. Adjust VR201 so that the centre point of the S/H pulse at TP204 comes to the center point of the burst signal at TP203 as shown.	 A = B ± 10%

13-4. 17.7MHz VCO ADJUSTMENT

(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP206	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VC201

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 13-1.
Note: OSCILLOSCOPE SETTING : DC mode 1. Connect the SCOPE to TP206. 2. VIDEO INPUT : NO INPUT condition 3. Confirm the D.C.Voltage at TP206 is 0V without a VIDEO INPUT signal. 4. Supply a COMPOSITE 100% COLOUR BAR signal to the in VIDEO INPUT. 5. Adjust VC201 so that the D.C. Voltage is 0V ± 0.2V at TP206.	

13-5. REF. SCH ADJUSTMENTENT

(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP207 TP208 TP210 FRAME REF AT SIGNAL GEN	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR202 (SCH DET)

ADJUSTMENT PROCEDURE & SPECIFICATION

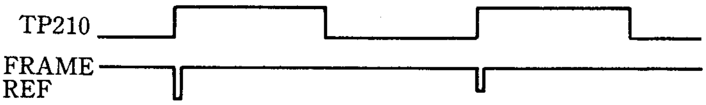
MACHINE CONDITION	Refer to the SECTION 13-1.

Step 1.

1. OSCILLOSCOPE SETTING
   20MHz FILTER : ON
   DELAY MODE : 20 [ns/TIME]
2. Input reference signal to VIDEO INPUT with SCH = 0 degree.

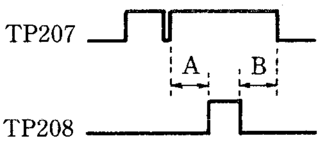
Step 2. [COARSE ADJUSTMENT]

1. SCOPE CH1 : TP210
   SCOPE CH2 : FRAME REF
2. Adjust VR202 so that the relation between TP210 and FRAME REF is as shown.



Step 3. [FINE ADJUSTMENT]

1. SCOPE CH1 : TP207
   SCOPE CH2 : TP208
2. Adjust VR202 so that the pulse at TP208 is set as shown.

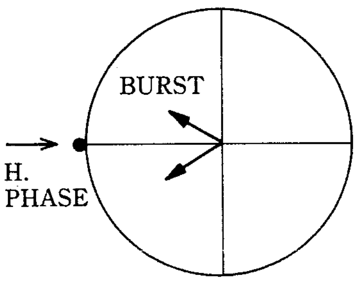
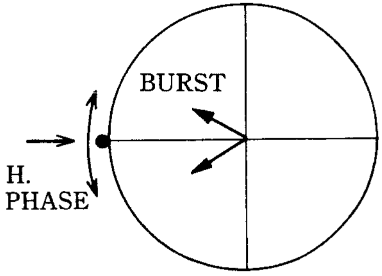


A=B±10%

13-6. SYSTEM SC PHASE ADJUSTMENT

(VIDEO 3)

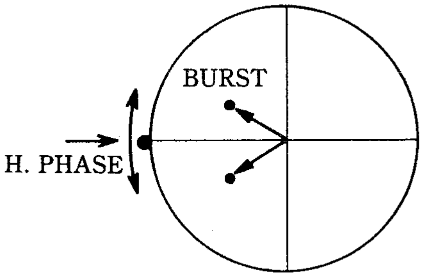
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP212 VIDEO 1 OUT (on the JACK PANEL BOARD) (W/75ohm Termination)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE AND SCH METER	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR206 (CK1 PHASE) SC COARSE SC FINE (on JACK PANEL BOARD)

ADJUSTMENT PROCEDURE & SPECIFICATION		
MACHINE CONDITION	Refer to the SECTION 13-1.	
Step 1. 1. The SCH phase of SIGNAL GENERATOR should be 0° at the GENERATOR OUTPUT. 2. SCH METER's trigger is in the EXTERNAL mode. (SYNC IN)	CONNECTION METHOD 1. Refer to the SECTION 13-2.	
Step 2. 1. Adjust the SYSTEM SC FINE VR so that the DC level at TP212 is 0V. 2. Adjust VR206 and the SYS SC COARSE VR so that the H phase of the VIDEO 1 OUT and the H phase of the VIDEO IN are the same. Note: H PHASE OF VIDEO IN is the Reference.	VIDEO IN (CH-A) (Reference)  BURST H. PHASE FIXED POSITION	VIDEO 1 OUT  BURST H. PHASE ⊘ SYS SC COARSE VR ⊘ VR206

13-7. SCH PHASE ADJUSTMENT

(VIDEO 3)

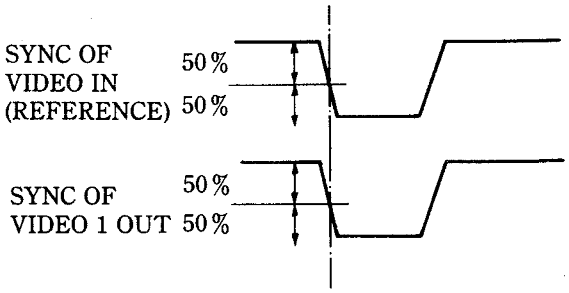
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (on the JACK PANEL BOARD) (W/75ohm Termination)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	SCH METER	(VIDEO IN) COMPOSITE 100% COLOUR BAR	VR204 (SCH PHASE)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 13-1.
Step 1. CONNECTION METHOD	Refer to the SECTION 13-2.
Step 2. 1. Set the SCH METER trigger to the INTERNAL mode. 2. SCOPE : VIDEO 1 OUT (on the JACK PANEL BOARD) 3. Adjust VR204 so that the H phase becomes 0° ± 2° (degrees) as compared to the Burst phase.	 SPECIFICATION : SCH = 0° ± 2° (degrees)

13-8. SYSTEM H PHASE ADJUSTMENT

(VIDEO 3)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (on the JACK PANEL BOARD) TP213	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	SYNC PHASE (on the JACK PANEL BOARD) VR205 (H PHASE)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	Refer to the SECTION 13-1.
Step 1. CONNECTION METHOD	Refer to the SECTION 13-2.
Step 2. OSCILLOSCOPE SETTING : DC mode Step 3. 1. Adjust the SYNC PHASE VR (on the JACK PANEL) so that the DC level of TP213 is 0V. 2. Adjust VR205 so that the sync phase of the VIDEO 1 OUT and the sync phase of the VIDEO IN are same as shown.	 SYNC OF VIDEO IN (REFERENCE) 50% 50% SYNC OF VIDEO 1 OUT 50% 50%

13-9. COMPOSITE OUTPUT Y/C TIMING ADJUSTMENT

(VIDEO 4)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (on the JACK PANEL BOARD)	PLAY	BLANK ☐ TAPE ALIGNMENT ■ TAPE PULSE & BAR PORTION	OSCILLOSCOPE	---------	VR502 (Y/C DELAY) VR503 (R-Y PHASE) (on the VIDEO 4 P.C.BOARD)

ADJUSTMENT PROCEDURE & SPECIFICATION

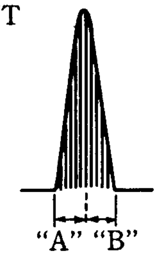
MACHINE CONDITION	Refer to the SECTION 13-1.

Step 1.

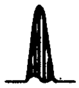
1. Insert the Aligment tape, and play back the PULSE & BAR PORTION.
2. SCOPE : VIDEO 1 OUT
3. Adjust VR502 so that the "A" portion is "FLAT".
4. Adjust VR503 so that the "B" portion is "FLAT".

FOR Y/C Timing, the “A” & “B” is represented as follows:

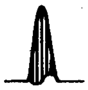
VIDEO 1 OUT



So if “A” is incorrect it looks like.



And if “B” is incorrect it looks like.



13-10. COMPONENT OUTPUT Y/C TIMING ADJUSTMENT

(VIDEO 3)

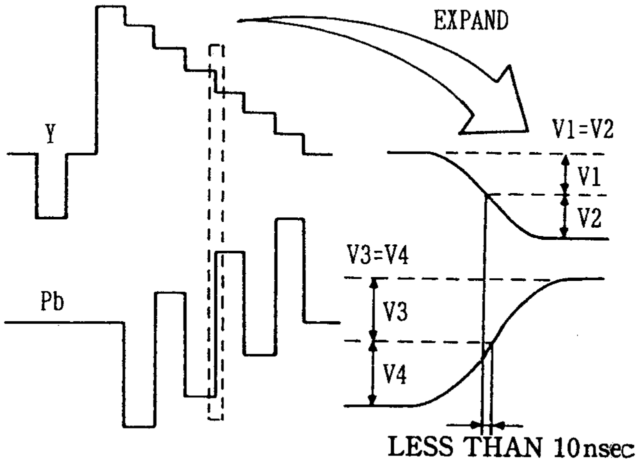
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pr OUT Pb OUT (on JACK PANEL BOARD)	PLAY	☐ BLANK TAPE ■ ALIGNMENT TAPE 100% COLOUR BAR PORTION	OSCILLOSCOPE	---------	VR805 (Y/PB TIMING) VR806 (Y/PR TIMING)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 13-1.

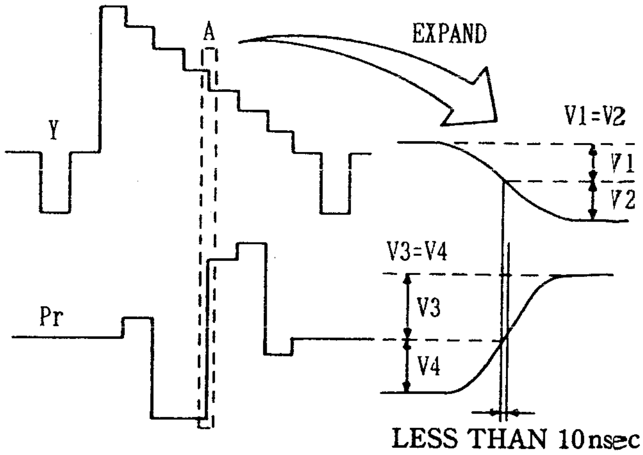
Step 1.

1. Insert the Aligment tape, and play back the 100% colour bar portion.
2. SCOPE CH1 : COMPONENT Y OUT (Ref.)
   SCOPE CH2 : COMPONENT Pb OUT
3. Adjust VR805 so that Y/Pb timing is 0ns ± 10ns as shown.


EXPAND
Y
V1=V2
V1
V2
Pb
V3=V4
V3
V4
LESS THAN 10nsec

Step 2.

1. SCOPE CH1 : COMPONENT Y OUT (Ref.)
   SCOPE CH2 : COMPONENT Pr OUT
2. Adjust VR806 so that Y/Pr timing is 0ns ± 10ns as shown.


A
EXPAND
Y
V1=V2
V1
V2
Pr
V3=V4
V3
V4
LESS THAN 10nsec

13-11. VIDEO PHASE ADJUSTMENT

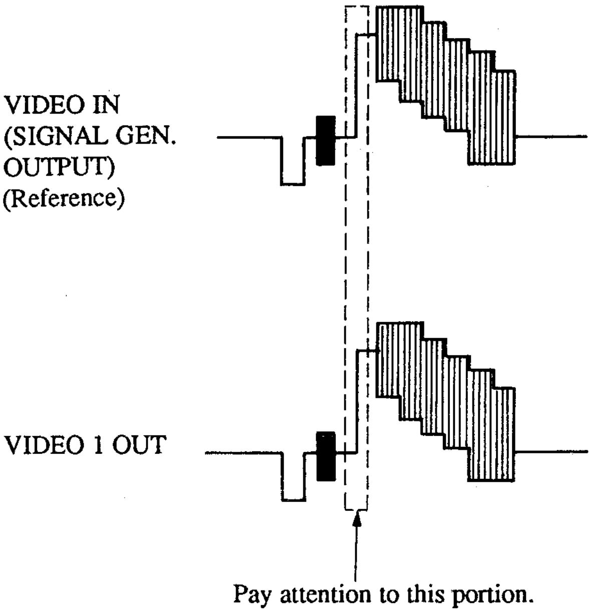
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (on JACK PAHEL BOARD)	E-E (EJECT)	-------	OSCILLOSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR	SW202 (VIDEO POS)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 13-1.
Step 1. CONNECTION METHOD	Refer to the SECTION 13-2. (B)

Step 2.

1. SCOPE CH1 : VIDEO IN (SIGNAL GEN. OUTPUT)
   SCOPE CH2 : VIDEO 1 OUT
2. Comfirm that the VIDEO phase of VIDEO 1 OUTPUT (CH2 of OSCILLOSCOPE) is same as VIDEO phase of SIGNAL GENERATOR OUTPUT (CH1 of OSCILLOSCOPE).
3. If it is not, adjust SW202 so that the VIDEO phase of VIDEO 1 OUTPUT (CH2 of OSCILLOSCOPE) and SIGNAL GENERATOR OUTPUT (CH2 of OSCILLOSCOPE) are the same phase as shown.

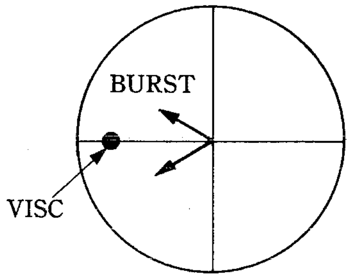

VIDEO IN
(SIGNAL GEN.
OUTPUT)
(Reference)
VIDEO 1 OUT
Pay attention to this portion.

13-12. CK2 PHASE ADJUSTMENT

(VIDEO 3)

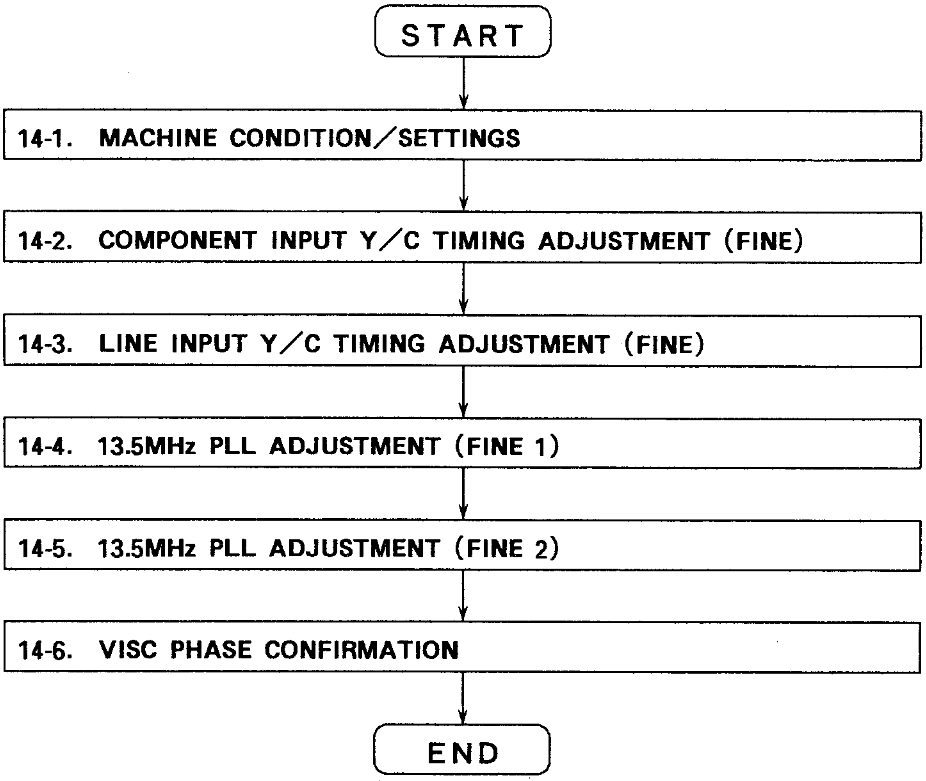
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (on JACK PANEL BOARD)	PLAY	BLANK ■ TAPE ALIGNMENT ☐ TAPE	VECTORSCOPE	COMPOSITE VIDEO SIGNAL 100% COLOUR BAR	SW2 (VBLK 1) (on VIDEO 4 P.C.BOARD) VR207 (CK2 PHASE) (on VIDEO 3 P.C.BOARD)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 13-1.
Step 1. 1. Insert a blank tape into an MII STUDIO RECORDER (AU-66H/65H/650 etc). 2. Supply a 100% COLOUR BAR to VIDEO INPUT to the STUDIO VTR. 3. Place the unit in the record mode for a while.	
Step 2. 1. Turn off SW2-5. 2. SCOPE : VIDEO 1 OUT (AU-55H) 3. Play back the just recorded tape that was made in Step 1, in the AU-55H. 4. Adjust VR207 so that the phase of VISC signal is centre of Burst axis (0° ± 2°). Step 3. 1. After this adjustment, set the SW2-5 to the ON position.	VIDEO 1 OUT  SPECIFICATION : 0° ± 2° (degree)

14. DECODER & CTCM BOARD (2/2)

DECODER & CTCM (2/2) SECTION FLOWCHART


START
14-1. MACHINE CONDITION/SETTINGS
14-2. COMPONENT INPUT Y/C TIMING ADJUSTMENT (FINE)
14-3. LINE INPUT Y/C TIMING ADJUSTMENT (FINE)
14-4. 13.5MHz PLL ADJUSTMENT (FINE 1)
14-5. 13.5MHz PLL ADJUSTMENT (FINE 2)
14-6. VISC PHASE CONFIRMATION
END

14-1. MACHINE CONDITION SETTING (DECODER & CTCM)

Set the switches on the Front Panel of follows unless spedified.

MODE -- EE/PB
METER SELECT -- VIDEO・TRACKING

Set the switches on the Jack Panel of follows unless specified.

VIDEO INPUT SELECT -------------------------------------- CAMERA IN
CAMERA INPUT SELECT -------------------------------------- COMPONENT
TRACKING VR -------------------------------------- FIXED POSITION
VIDEO IN LEVEL -------------------------------------- FIXED POSITION

14-2(A). COMPONENT INPUT Y/C TIMING ADJUSTMENT (FINE) (BY USING WAVEFORM MONITOR)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pb OUT Pr OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	WAVEFORM MONITOR	(CAMERA IN) COMPONENT PULSE & BAR (MOD. 20T)	VR907 (Y BU PHASE) VR505 (Y/C TMG)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

1. Refer to the SECTION 14-1.
2. COMPONENT OUTPUT Y/C TIMING ADJ. (13-10) should be completed before this adjustment is done.

Step 1.

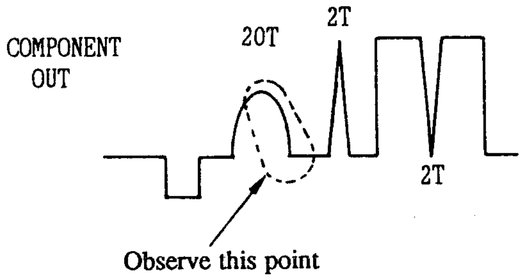
1. WAVEFORM MONITOR CONDITION

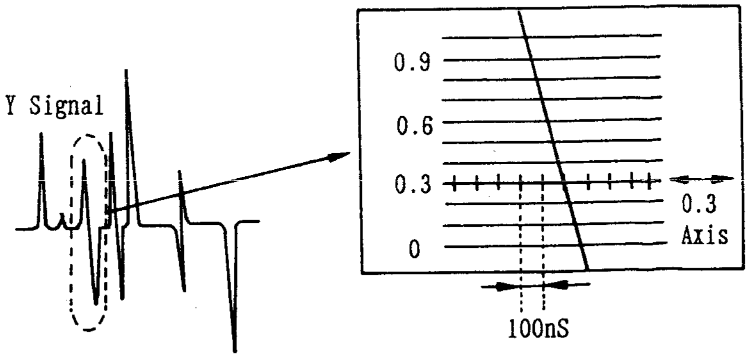
RESPONSE : DIFFD STEP mode
VOLTS FULL SCALE : MAX (UNCAL)
DISPLAY : × 1 (5)
MAGNIFIER : ×50 (0.1)
TRIGGER : VIDEO OUT OF VTR

Step 2.

Note:
The COMPONENT OUTPUT CABLE LENGTH should be all the same length.

1. Make a recording, then play back the just recorded portion.
2. WFM MONITOR
   CHA : COMPONENT Y OUT
   CHB : COMPONENT Pr OUT
   EXT SYNC CH1 : VIDEO OUT
   CH2 : VIDEO OUT
3. Observe the falling portion of the modulated 20T pulse signal.
4. Adjust the vertical and horizontal position of the WFM Monitor so that the center line of falling edge is set to 0.3 axis as shown.
5. Change the Input Select of the WFM Switch from the Ach (COMPONENT Y OUT) to the Bch (COMPONENT Pr OUT).
6. Measure the difference between the Y and Pr signal timing.
7. If it is not within ± 20ns, adjust VR907.
8. WFM MONITOR
   CHA : COMPONENT Y OUT
   CHB : COMPONENT Pb OUT
9. Measure the difference between the Y and Pb signal timing.
10. If it is not within ± 20ns, fine adjust VR505 and repeat #1 to #10 of Step 2.





SPECIFICATION : Y/C TIMING = ± 20ns

14-2(B). COMPONENT INPUT Y/C TIMING ADJUSTMENT (FINE) (BY USING OSCILLOSCOPE)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pb OUT Pr OUT (on JACK PANEL BOARD)	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VR907 (Y BU PHASE) VR505 (Y/C TMG)

ADJUSTMENT PROCEDURE & SPECIFICATION

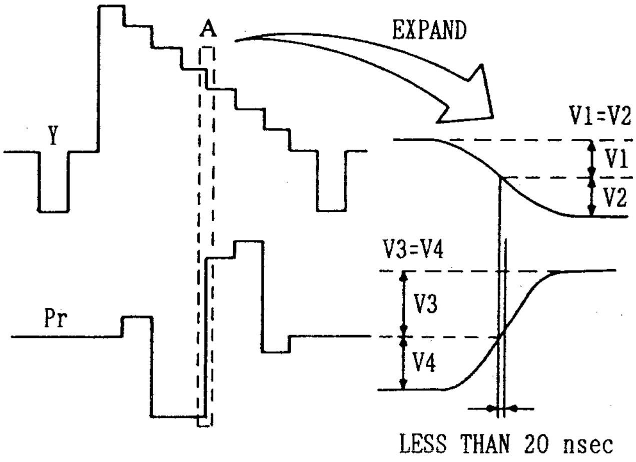
MACHINE CONDITION

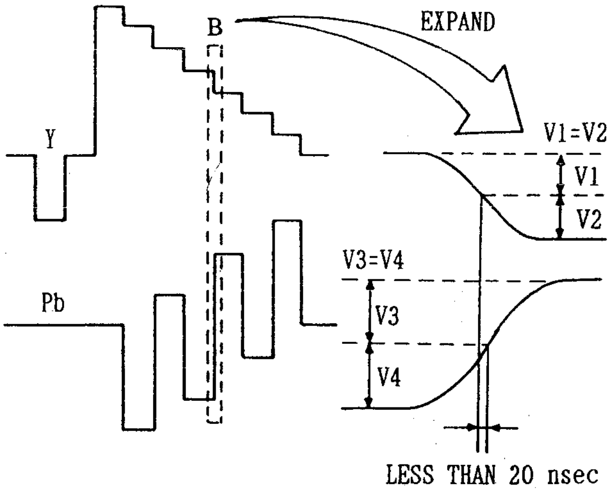
1. Refer to the SECTION 14-1.
2. COMPONENT OUTPUT Y/C TIMING ADJ. (13-10) should be completed before this adjustment is done.

Step 1.

Note:
COMPONENT OUTPUT CABLE LENGTH should be the same length.

1. Make a recording, then play back the just recorded portion.
2. SCOPE CH1 : COMPONENT Y OUT
   SCOPE CH2 : COMPONENT Pr OUT
3. Confirm that the Y/Pr Timing of "A" portion is less than 20ns as shown.
4. If it is not within specification, adjust VR907 so that the Y/Pr Timing of "A" portion is less than 20ns.
5. SCOPE CH1 : COMPONENT Y OUT
   SCOPE CH2 : COMPONENT Pb OUT
6. Confirm that the Y/Pb Timing of "B" portion is less than 20ns as shown.
7. If it is not within specification, fine adjust VR505 so that the Y/Pb Timing of "B" portion is less than 20ns and repeat #1 to #7.





14-3(A). LINE INPUT Y/C TIMING ADJUSTMENT (FINE) (BY USING WAVEFORM MONITOR)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pb OUT Pr OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	WAVEFORM MONITOR	(VIDEO IN) MOD. 20T PULSE	VR214 (Pr TMG) VR212 (Pb TMG)

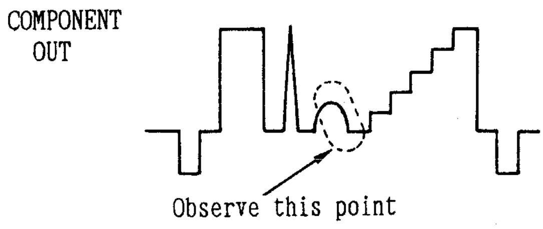
ADJUSTMENT PROCEDURE & SPECIFICATION

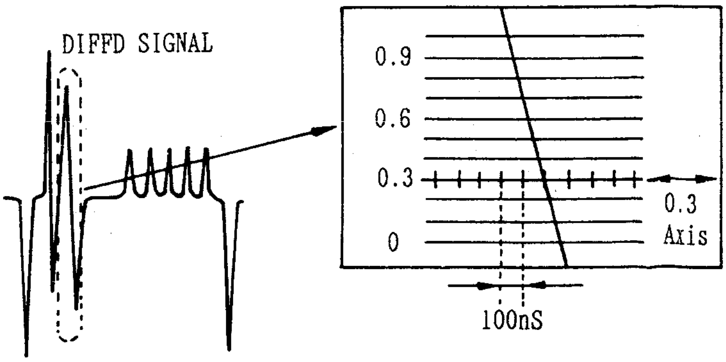
MACHINE CONDITION	1. Refer to the SECTION 14-1. 2. VIDEO INPUT SELECT : VIDEO IN 3. COMPOSITE OUTPUT Y/C TIMING ADJ. (13-9) should be completed before this adjustment is done.
Step 1. 1. WAVEFORM MONITOR CONDITION	RESPONSE : DIFFD STEP mode VOLTS FULL SCALE : MAX (UNCAL) DISPLAY : × 1 (5) MAGNIFIER : ×50 (0.1) TRIGGER : VIDEO OUT OF VTR

Step 2.

Note:
COMPONENT OUTPUT CABLE LENGTH should be the same length.

1. Make a recording, then play back the just recorded portion.
2. WFM MONITOR
   CHA : COMPONENT Y OUT
   CHB : COMPONENT Pr (Pb) OUT
   EXT SYNC CH A : VIDEO OUT
   CH B : VIDEO OUT
3. Observe the falling portion of the modulated 20T pulse signal.
4. Adjust the vertical and horizontal position of WFM Monitor so that the center line of the falling edge is set to 0.3 axis as shown.
5. Change the Input Select of WFM Switch from the Ach (COMPONENT Y ONT) to the Bch (COMPONENT Pr (Pb) OUT).
6. Measure the difference between the Y and Pr (Pb) signal timing.
7. If it is not within ± 20ns, adjust VR214 (Pr) and VR212 (Pb) and repeat #1 to #7 of Step 2.





14-3(B). LINE INPUT Y/C TIMING ADJUSTMENT (FINE) (BY USING OSCILLOSCOPE)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pb OUT Pr OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(VIDEO IN) LINE IN COLOUR BAR	VR214 (Pr TMG) VR212 (Pb TMG)

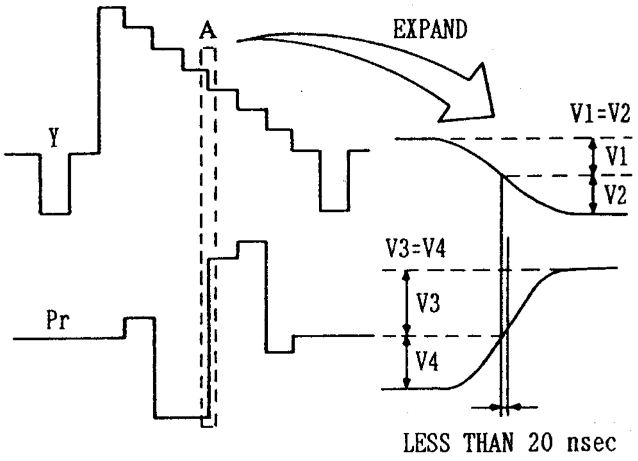
ADJUSTMENT PROCEDURE & SPECIFICATION

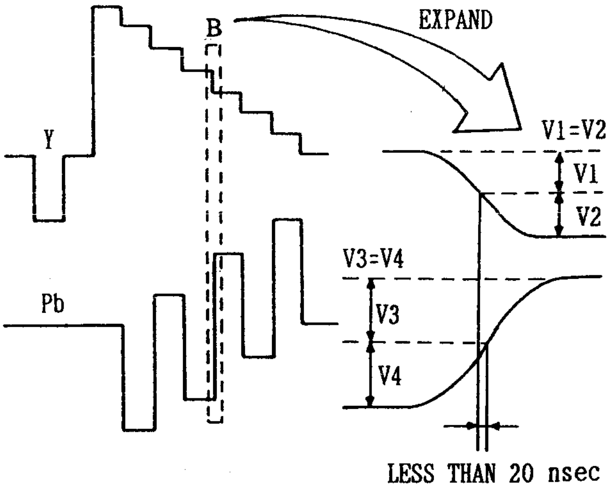
MACHINE CONDITION	1. Refer to the SECTION 14-1. 2. VIDEO INPUT SELECT : VIDEO IN 3. COMPONENT OUTPUT Y/C TIMING ADJ. (13-9) should be completed before this adjustment is done.

Step 1.

Note:
COMPONENT OUTPUT CABLE LENGTH should be the same length.

1. Make a recording for a few minutes.
2. Play back the just recorded portion.
3. SCOPE CH1 : COMPONENT Y OUT
   SCOPE CH2 : COMPONENT Pr OUT
4. Confirm that the Y/Pr Timing of the "A" portion is less than 20ns as shown.
5. If it is not within specification, adjust VR214 (Pr) so that the Y/Pr Timing of the "A" portion is less than 20ns and repeat #1 to #4.
6. SCOPE CH1 : COMPONENT Y OUT
   SCOPE CH2 : COMPONENT Pb OUT
7. Confirm that the Y/Pb Timing of the "B" portion is less than 20ns as shown.
8. If it is not within specification, adjust VR212 (Pb) so that the Y/Pr Timing of "B" portion is less than 20ns and repeat #1 to #7.





14-4. 13.5MHz PLL ADJUSTMENT (FINE 1)

(DECODER & CTCM)

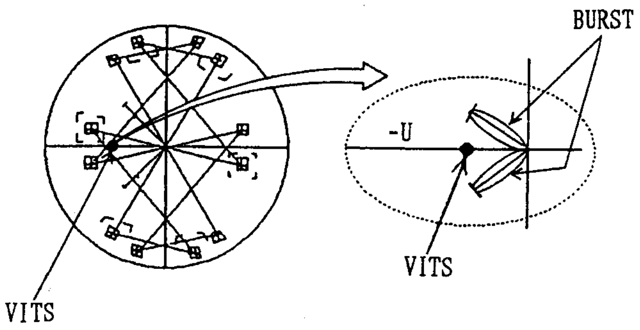
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (W/75ohm Termination (on JACK PANEL BOARD)	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	VECTORSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR WITH VITS SIGNAL (THAT HAVE Pb AXIS SC)	VR701 (SYNC ϕ)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 14-1. 2. VIDEO INPUT SELECT : VIDEO IN 3. CK2 PHASE ADJ. (13-12) should be completed before this adjustment is done.

Step 1.

1. Place the unit in the record mode.
2. Then play back the just recorded portion.
3. VECTOR SCOPE setting : VIDEO 1 OUT (W/75ohm Termination)
4. Set the vector scope to the burst level 100% and burst phase on the burst line of the vector scope.
5. Confirm that the VITS signal phase is the same as the U (Pb) axis as shown. (0° ± 2°)
6. If it is not within specification, fine adjust VR701 so that the phase difference is 0° ± 2°.

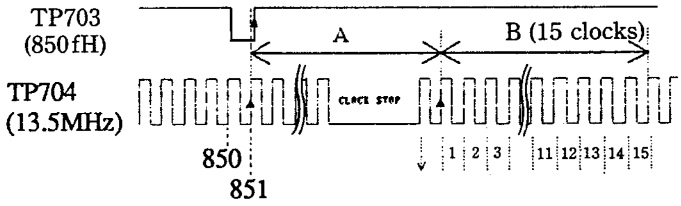


SPECIFICATION : Phase difference = 0° ± 2° (degrees)

14-5. 13.5MHz PLL ADJUSTMENT (FINE 2)

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP701 TP703 TP704	E-E (EJECT)	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	(CAMERA IN) COMPONENT 100% COLOUR BAR	VL701 (PLL OFFS) VR702 (PLL POS)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 14-1. 2. VIDEO INPUT SELECT : CAMERA IN
Step 1. 1. SCOPE : TP701 2. Adjust VL701 so that the DC voltage of TP701 is 0V ± 0.2V.	
Step 2. 1. SCOPE CH1 : TP703 (850 fh) SCOPE CH2 : TP704 (13.5MHz) 2. OSCILLOSCOPE SETTING EXT TRIGGER : COMPOSITE SYNC from SIGNAL GENERATOR Delay Mode : 100ns/Div. 3. Adjust VR702 so that the "A" period and "B" period are the same as shown.	 TP703 (850fH) TP704 (13.5MHz) A B (15 clocks) CLOCK STOP 850 851 1 2 3 11 12 13 14 15 SPECIFICATION: A : B = 100% : 100% ± 2%

14-6. VISC PHASE CONFIRMATION & ADJUSTMENT

(DECODER & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (on JACK PANEL BOARD)	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	VECTORSCOPE	(VIDEO IN) COMPOSITE 100% COLOUR BAR WITH VITS SIGNAL (THAT HAVE Pb AXIS SC)	VR81 (VSC PHASE)

ADJUSTMENT PROCEDURE & SPECIFICATION

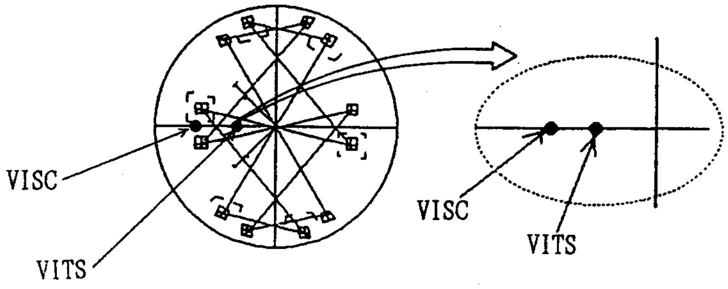
MACHINE CONDITION	
	1. Refer to the SECTION 14-1. 2. VIDEO INPUT SELECT : VIDEO IN 3. CH2 PHASE ADJ. (13-12) should be completed before this adjustment is done.

Step 1.

1. SW2-5 : OFF (on VIDEO 4 P.C.BOARD)
2. Record a colour bar signal that includes a VITS signal.
3. Playback the just recorded portion.
4. Confirm that the phase of the VISC signal and the VITS signal are equal.
5. If it is not within specification, adjust VR81 so that the phase of the VISC signal and the VITS signal are the same.

Note:
During the PLAYBACK mode, VR81 can't be adjusted.

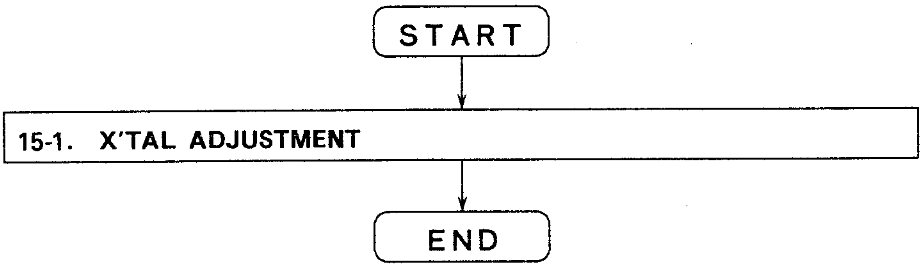
6. After this adjustment, set SW2-5 to the "ON" position.



SPECIFICATION:
PHASE DIFFERENCE = 0° ± 2° (degrees)

15. FRONT BOARD

FRONT SECTION FLOWCHART



15-1. X'TAL ADJUSTMENT

(FRONT)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP1	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	FREQUENCY COUNTER	---------	VC1

ADJUSTMENT PROCEDURE & SPECIFICATION	
Step 1. 1. SCOPE : TP1 2. Adjust VC1 so that frequency is 512.000Hz ± 0.0002Hz.	SPECIFICATION: TP1 = 512.000Hz ± 0.0002Hz

SECTION 5

EXPLODED VIEWS
REPLACEMENT PARTS LISTS

This section provides the exploded views , mechanical parts lists and electrical parts lists.

NOTES

1. ● Be sure to make your orders of replacement parts according to this list.
   ● "<R>" in Remark column indicates recommended parts.
   ● "<M>" in Remark column indicates needed in the periodical maintenance.
2. IMPORTANT SAFETY NOTICE
   Components identified by "<!>" have special characteristics important for safety.
   When replacing any of these components, use only the original ones.
   Meaning of symbol "<!>" on this parts list is exactly the same as symbol ! on Schematic and Circuit Board Diagrams.
3. Unless otherwise specificed;
   All ressistors are in (Ω), K=1,000Ω, M=1,000kΩ.
   All capacitors are in (F), U=10 F, P=10 F.
4. ITEM NUMBERS WITH CAPITAL LETER E
   Item numbers with capital leter E (Example:E1, E2,...) in Ref.No. column mean that the parts are listed with the E item numbers in the exploded views.
5. Then main assembled parts are shown below C.B.A. marked with "■".
6. When ordering parts, use parts No. only form Part No. column.
7. Printed circuit board assembly with mark (NLA) is no longer available after discontinuation of the product.
8. Abbreviations for parts;

-- NAME --	-- DESCRIPTION --
C.CAPACITOR	CERAMIC CAPACITOR
C.CAPACITOR CH	CERAMIC CHIP CAPACITOR
E/CAPACITOR	ELECTROLYTIC CAPACITOR
G.CAPACITOR	GLASS CAPACITOR
M.CAPACITOR	MICA CAPACITOR
P.CAPACITOR	PLASTIC FILM CAPACITOR
S.CAPACITOR	SE,O-CONDUCTOR CAPACITOR
T.CAPACITOR	TANTALUM CAPACITOR
TRIMMER	TRIMMER
C.RESISTOR	CARBON RESISTOR
F.RESISTOR	FUSE RESISTOR
M.RESISTOR	METAL OXSIDE RESISTOR
M.RESISTOR CH	METAL OXSIDE CHIP RESISTOR
S.RESISTOR	SOLID RESISTOR
V.RESISTOR	VARIABLE RESISTOR
W.RESISTOR	WIRE WOUND RESISTOR
COMBI. TR-R	TRANSISTOR-RESISTOR COMBINATION PARTS
COMBI. R-R	RESISTOR-RESISTOR COMBINATION PARTS
COMBI. C-R-L	CAPACITOR-COIL COMBINATION PARTS
C.B.A.	CIRCUIT BOARD ASSEMBLY

1. ELECTRICAL REPLACEMENT PARTS LIST

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP86114B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			SYSCON & TC		
		VEP82087B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			SERVO		
		VEP80735A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			VIDEO MOTHER		
		VEP83163B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			VIDEO 1		
		VEP83160B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			VIDEO 2		
		VEP83161B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			VIDEO 3		
		VEP83162B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			VIDEO 4		
		VEP80736A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			AUDIO MOTHER		
		VEP84145A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			AUDIO		
		VEP82088A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			DRIVE		
		VEP83159B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			DECODER & CTCM		
		VEP81065A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			POWER		
		VEP86115B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			FRONT		
		VEP84148A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			AUDIO MONITOR		
		VEP83164B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			JACK		
		VEP84146A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			HEAD PHONE		
		VEP84147B	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			AUDIO I/O		
		VEP80734A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			VOLUME		
		VEP80737A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			METER		
		VEP80738A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			METER SELECT		
		VEP89005A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			MECHA I/F (2)		
		VEP89004A	P.C.BOARD W/COMPONENT	1	(RCL)<R>
			MECHA I/F (1)		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP86114B	P.C.BOARD W/COMPONENT		
			SYSCON & TC		
			CAPACITORS		
C1		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C2,C3		ECUX1H270JCV	C.CAPACITOR 50V 27P	2	
C4-C6		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C8		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C9		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C10		ECEV1HV3R3S	E.CAPACITOR 50V 3.3U	1	
C11-13		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C14		ECEA0JKS331	E.CAPACITOR 6.3V 330U	1	
C15		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C16,17		ECUX1H680JCV	C.CAPACITOR 50V 68P	2	
C19-21		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C23,24		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C27		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C29-32		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C39-42		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	4	
C43		ECEA1CKS101	E.CAPACITOR 16V 100U	1	
C44		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C45		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C46		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C47		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C48		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C50-55		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	6	
C56		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C57,58		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C59,60		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C61,62		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C63		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C64-68		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	5	
C78		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C500		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C501,02		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	2	
C503		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C504,05		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C507-13		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	7	
C514		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C515		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C516		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C517		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C518		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C519		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C520-22		ECUX1H150JCV	C.CAPACITOR 50V 15P	3	
C523		ECUX1H180JCV	C.CAPACITOR 50V 18P	1	
C524		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C525		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C526		ECUX1H181JCV	C.CAPACITOR 50V 180P	1	
C527-30		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	4	
C532-34		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C536		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C538		ECEV1CN100SP	E.CAPACITOR 16V 10U	1	
C539		ECUX1H272KBV	C.CAPACITOR 50V 2700P	1	
C540		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C541		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
D1		MA143	DIODE	1	<R>
D2		MA141K	DIODE	1	<R>
D3		MA141WA	DIODE	1	<R>
D4		MA141K	DIODE	1	<R>
D500		MA143	DIODE	1	<R>
D501		MA3024	DIODE	1	<R>
D503,04		MA3024	DIODE	2	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC1		HD641802F8	IC	1	<R>
IC2		TMPZ84C43AF6	IC	1	<R>
IC3		MC74HC04AF	IC	1	<R>
IC4		MC74HC00AF	IC	1	<R>
IC6		MB8464A80LFF	IC	1	<R>
IC7		VSI1260	IC	1	<R>
IC8,C9		MC74HC541F	IC	2	<R>
IC11		MBM221220	IC	1	<R>
IC12		TC74HC190AF	IC	1	<R>
IC13		MC34051M	IC	1	<R>
IC16		M74F32FP	IC	1	<R>
IC17		TL7705CPSB	IC	1	<R>
IC18		MC74HC138AF	IC	1	<R>
IC21		MC74HC4538F	IC	1	<R>
IC22		MB89363BPF	IC	1	<R>
IC23		UPD71054GB	IC	1	<R>
IC24		MC14050BF	IC	1	<R>
IC25		MC74HC74AF	IC	1	<R>
IC26		NJM2903M	IC	1	<R>
IC27		NJM2904M	IC	1	<R>
IC28,29		MB89363BPF	IC	2	<R>
IC30		NJM2903M	IC	1	<R>
IC31		MC14050BF	IC	1	<R>
IC32		NJM2903M	IC	1	<R>
IC33		MC14053BF	IC	1	(R)<R>
IC34		NJM2903M	IC	1	<R>
IC500		UPD78C10GF	IC	1	<R>
IC501		MB8421-90LPF	IC	1	<R>
IC502		VSI1261	IC	1	<R>
IC503		MC74HC573AF	IC	1	<R>
IC504		MN51040VPI	IC	1	<R>
IC505-07		MC74HC574AF	IC	3	<R>
IC508		MC74HC138AF	IC	1	<R>
IC509,10		MC74HC32AF	IC	2	<R>
IC512		MN1237A	IC	1	<R>
IC513,14		MC14052BF	IC	2	<R>
IC515		UPC319G2	IC	1	<R>
IC516		MC74HC74AF	IC	1	<R>
IC518		NJM082BM	IC	1	<R>
IC520		MC74HC00AF	IC	1	<R>
ICF7		VJF0949	IC HOLDER	1	<R>
ICF502		VJF0949	IC HOLDER	1	<R>
ICS7		VJS3146Z028	IC SOCKET	1	<R>
ICS11		VJS2336A018	CONNECTOR (FEMALE)	1	<R>
ICS502		VJS3146Z028	IC SOCKET	1	<R>
P400		VJS3406D030	CONNECTOR (FEMALE)	1	
P401		VJS3406D014	CONNECTOR (FEMALE)	1	
P402		VJP1611T	CONNECTOR(MALE)	1	
P403		VJP1613T	CONNECTOR	1	
P404		VJS3406D018	CONNECTOR (FEMALE)	1	
P405		VJP1944T	CONNECTOR (MALE)	1	
P406		VJP1986T	CONNECTOR (MALE)	1	
P407		VJP1944T	CONNECTOR (MALE)	1	
P410		VJS3406D030	CONNECTOR (FEMALE)	1	
P411		VJS3406D014	CONNECTOR (FEMALE)	1	
P416		VJS3406D016	CONNECTOR (FEMALE)	1	
Q1		2SB1219-QR	TRANSISTOR	1	<R>
Q2		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q3		2SD1819AQR	TRANSISTOR	1	<R>
Q4		2SB1219-QR	TRANSISTOR	1	<R>
Q5		UN5113	TRANSISTOR	1	<R>
Q6,Q7		UN5213	TRANSISTOR-RESISTOR	2	<R>
Q8		2SD1819AQR	TRANSISTOR	1	<R>
Q9		UN5212	TRANSISTOR	1	<R>
Q10		2SD1819AQR	TRANSISTOR	1	<R>
Q11-17		UN5213	TRANSISTOR-RESISTOR	7	<R>
Q22		UN5113	TRANSISTOR	1	<R>
Q23,24		2SD1819AQR	TRANSISTOR	2	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q25		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q26-29		2SD1819AQR	TRANSISTOR	4	<R>
Q30		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q500		UN5213	TRANSISTOR-RESISTOR	1	<R>
			RESISTORS		
R1-R3		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	3	
R4-R9		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	6	
R10,11		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R12		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R13		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R14		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R15,16		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	2	
R17		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R18		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R19		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R20		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R21		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R22		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R28		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R29		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R30		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R31,32		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R33		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R34-36		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R37-39		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	3	
R46-51		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	6	
R52		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R53		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R54		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R55-57		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	3	
R58		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R61		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R62		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R63,64		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	2	
R65		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R66		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R67,68		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	2	
R69		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R70		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R71		ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R72		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R73		ERJ6GEYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R74		ERJ6GEYG824	M.RESISTOR CH 1/10W 820K	1	
R75		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R76		VRE0034E333	M.RESISTOR CH 1/10W 33K	1	
R77-79		VRE0034E104	M.RESISTOR CH 1/10W 100K	3	
R80		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R81		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R82-84		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R86		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R89		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R91-99		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	9	
R100-02		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	3	
R103		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R104		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R105		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R106		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R107		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R108		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R109		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R110		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R111		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R112		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R113		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R114,15		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	2	
R117		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R119		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R120		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R121		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R123		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R124		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R125		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R127		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R128		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R129,30		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	2	
R131		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R133		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R138		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R139,40		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R141		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R142		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R143		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R144		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R146		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R147		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R148		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R149		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R150		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R151		ERJ3GEYG223	M.RESISTOR CH 1/16W 22K	1	
R152		ERJ3GEYG104	M.RESISTOR CH 3W 100K	1	
R153		ERJ3GEYG334	M.RESISTOR CH 1/16W 330K	1	
R154,55		ERJ3GEYG224	M.RESISTOR CH 3W 220K	2	
R156		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R157		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R159		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R160		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R161		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R162		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R163		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R180-92		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	13	
R193,94		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	2	
R195,96		ERJ6GEYJ121	M.RESISTOR CH 1/10W 120	2	
R197		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R500,01		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R502		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R503		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R512		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R513,14		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R515		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R516		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R517		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R518		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R520-27		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	8	
R528		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R529		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R530		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R531		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R532		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R533		ERJ3GEYG273	M.RESISTOR CH 1/16W 27K	1	
R537		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R538		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R539		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R540		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R541		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R542		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R543-50		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	8	
SW1		VSS0367-06TB	SWITCH	1	<R>
SW500,01		VSS0367-04TB	SWITCH	2	<R>
VR1,R2		VRV0161B103	V.RESISTOR 10K	2	
X1		VSX0373	CRYSTAL OSCILLATOR	1	<R>
X500		VSX0357	CRYSTAL OSCILLATOR	1	<R>
X501		VSX0284	CRYSTAL OSCILLATOR	1	<R>
X502		VSX0098	CRYSTAL OSCILLATOR	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP82087B	P.C.BOARD W/COMPONENT		
			SERVO		
			CAPACITORS		
C1		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C3		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C5		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C7		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C9		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C10		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C11		ECEV1CV220S	E.CAPACITOR 16V 22U	1	
C12-14		ECEV0JV101S	E.CAPACITOR 6.3V 100U	3	
C15		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C16		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C17		ECEV1HN010S	E.CAPACITOR 50V 1U	1	
C18,19		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C20		ECEV1HN010S	E.CAPACITOR 50V 1U	1	
C21,22		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C23		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C24		ECEV1HVR47S	E.CAPACITOR 50V 0.47U	1	
C25		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C26,27		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C29		ECEV1EN100S	E.CAPACITOR 25V 10U	1	
C30		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C31		ECUX1H471JCV	C.CAPACITOR 50V 470P	1	
C32		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C33		ECEV1HVR47S	E.CAPACITOR 50V 0.47U	1	
C34		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C35		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C36		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C37		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C38		ECUM1C184KBM	C.CAPACITOR CH 16V 0.18U	1	
C39		ECUM1C124KBN	C.CAPACITOR CH 16V 0.12U	1	
C40		ECUM1C154KBN	C.CAPACITOR CH 16V 0.15U	1	
C41		ECUM1E273KBN	C.CAPACITOR CH 25V 0.027U	1	
C42		ECUX1H471JCV	C.CAPACITOR 50V 470P	1	
C43		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C44		ECEV1EV4R7S	E.CAPACITOR 25V 4.7U	1	
C47		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C48		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C49		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C50		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C51		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C52		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C53		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C54		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C55		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C56,57		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	2	
C58		ECQB1C104JA	P.CAPACITOR CH 16V 0.1U	1	
C59-61		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C62		ECEV0JN470S	E.CAPACITOR 6.3V 47U	1	
C64-66		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C67		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C68,69		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C70		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C71		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C72		ECUM1H333KBN	C.CAPACITOR CH 50V 0.033U	1	
C73		ECHU1C273JA	P.CAPACITOR 0.027UF	1	
C74		ECUM1C184KBM	C.CAPACITOR CH 16V 0.18U	1	
C75-77		ECEV1HV2R2S	E.CAPACITOR 50V 2.2U	3	
C78		ECEV0JV330S	E.CAPACITOR 6.3V 33U	1	
C79		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C80,81		ECEV1EV4R7S	E.CAPACITOR 25V 4.7U	2	
C82		ECUX1H472KBV	C.CAPACITOR 50V 4700P	1	
C83		ECEV1CV100S	E.CAPACITOR 16V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C84		ECUM1E183KBV	C.CAPACITOR CH 25V 0.018U	1	
C85		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C86		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C87		ECUM1C274KBM	C.CAPACITOR 16V 0.27U	1	
C88		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C89		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C90		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C91,92		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	2	
C93		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C94		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C95		ECQB1C104JA	P.CAPACITOR CH 16V 0.1U	1	
C96,97		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C98		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C99		ECHU1C273JA	P.CAPACITOR 0.027UF	1	
C100-06		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	7	
C301		ECUX1H122KBV	C.CAPACITOR CH 50V 1200P	1	
C302		ECUM1C334KBM	C.CAPACITOR 16V 0.33U	1	
C303		ECEV1HVR22S	E.CAPACITOR 50V 0.22U	1	
C304		ECEV1CV220S	E.CAPACITOR 16V 22U	1	
C306		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C307		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C308		ECEV1HN010S	E.CAPACITOR 50V 1U	1	
C309		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C310		ECUX1H472KBV	C.CAPACITOR 50V 4700P	1	
C311		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C312		ECUM1C274KBM	C.CAPACITOR 16V 0.27U	1	
C313		ECEV1HN010S	E.CAPACITOR 50V 1U	1	
C314		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C315,16		ECEV1HVR22S	E.CAPACITOR 50V 0.22U	2	
C317,18		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	2	
C319		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C320		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C321,22		ECEV1HVR22S	E.CAPACITOR 50V 0.22U	2	
C323		ECEV1HV0R1S	E.CAPACITOR 50V 0.1U	1	
C324		ECEV1EN3R3S	E.CAPACITOR 25V 3.3U	1	
C325		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C326		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C327,28		ECEV1EN3R3S	E.CAPACITOR 25V 3.3U	2	
C329		ECEV1HV010S	E.CAPACITOR 50V 1U	1	
C330		ECEV0JV330S	E.CAPACITOR 6.3V 33U	1	
C331		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C332		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C333		ECUM1C154KBN	C.CAPACITOR CH 16V 0.15U	1	
C334-40		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	7	
C341		ECUM1C274KBM	C.CAPACITOR 16V 0.27U	1	
C342-45		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
D1,D2		MA143	DIODE	2	<R>
D3-D6		MA141K	DIODE	4	<R>
D7		MA143	DIODE	1	<R>
D8,D9		MA141K	DIODE	2	<R>
D10,11		MA141K	DIODE	2	<R>
D12		MA141WA	DIODE	1	<R>
D13		MA141K	DIODE	1	<R>
D14,15		MA141WK	DIODE	2	<R>
D16		MA141WA	DIODE	1	<R>
D18-20		MA141K	DIODE	3	<R>
D21		MA8033-H	DIODE	1	<R>
D301		MA141K	DIODE	1	<R>
D302,03		MA141WA	DIODE	2	<R>
D304		MA141K	DIODE	1	<R>
D305		MA141WA	DIODE	1	<R>
D306		MA141K	DIODE	1	<R>
D307		MA141WA	DIODE	1	<R>
D308		MA141K	DIODE	1	<R>
D309		MA141WK	DIODE	1	<R>
D310		MA141K	DIODE	1	<R>
D311,12		MA143	DIODE	2	<R>
D313		MA141WK	DIODE	1	<R>
D314		MA143	DIODE	1	<R>
D315,16		MA141WK	DIODE	2	<R>
D317		MA141K	DIODE	1	<R>
D318-21		MA141WK	DIODE	4	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D322-27		MA141K	DIODE	6	<R>
D328		MA141WA	DIODE	1	<R>
D329		MA141K	DIODE	1	<R>
IC1,C2		UPC4558G2	IC	2	<R>
IC3		NJM2904M	IC	1	<R>
IC4		NJM4558M	IC	1	<R>
IC5		MN4030BS	IC	1	<R>
IC6		MC74HC02AF	IC	1	<R>
IC7		NJM2903M	IC	1	<R>
IC8		MC14538BF	IC	1	<R>
IC9		NJM2904M	IC	1	<R>
IC10		NJM2903M	IC	1	<R>
IC11		MC14013BF	IC	1	<R>
IC12,13		MC14538BF	IC	2	<R>
IC14		NJM2904M	IC	1	<R>
IC15		NJM2903M	IC	1	<R>
IC16		MC74HCU04F	IC	1	<R>
IC17,18		MC14053BF	IC	2	(R)<R>
IC19		NJM2904M	IC	1	<R>
IC20		MC14028BF	IC	1	<R>
IC21		MC14051BF	IC	1	<R>
IC22		UPD65042F396	IC	1	<R>
IC23		MN53015VZW	IC	1	<R>
IC25		MN53007VYC	IC	1	<R>
IC27		MC74HCU04F	IC	1	<R>
IC28		MC14538BF	IC	1	<R>
IC29		MC14013BF	IC	1	<R>
IC30		MC74HC00AF	IC	1	<R>
IC31		MC14023BF	IC	1	<R>
IC32		MC74HC08AF	IC	1	<R>
IC34		MC14538BF	IC	1	<R>
IC36		MC74HC00AF	IC	1	<R>
IC37		MC14053BF	IC	1	(R)<R>
IC38		NJM2904M	IC	1	<R>
IC39		MN51020VZZ	IC	1	<R>
IC40		MC74HCU04F	IC	1	<R>
IC41		NJM2904M	IC	1	<R>
IC42,43		MC14538BF	IC	2	<R>
IC44		UPC4558G2	IC	1	<R>
IC45		MC14013BF	IC	1	<R>
IC306		AN3620SM	IC	1	<R>
IC311,12		MC14053BF	IC	2	(R)<R>
IC313		MC14538BF	IC	1	<R>
IC314		NJM2904M	IC	1	<R>
IC315,16		MC14028BF	IC	2	<R>
L1		VLQ0319K101	COIL 100UH	1	
L2-L4		VLQ0319K100	COIL 10UH	3	
P501		VJP1596T	CONNECTOR (MALE) 3P	1	
P502		VJP1595T	CONNECTOR (MALE) 2P	1	
P503		VJP1602T	CONNECTOR (MALE) 9P	1	
P504		VJS2907D030	CONNECTOR (FEMALE)	1	
P505,06		VJP1597T	CONNECTOR (MALE) 4P	2	
P507		VJP1231T	CONNECTOR (MALE) 4P	1	
P510		VJS2907D030	CONNECTOR (FEMALE)	1	
P513		VJP1230T	CONNECTOR (MALE) 3P	1	
Q1		2SB1218AQR	TRANSISTOR	1	<R>
Q2		UN5211	TRANSISTOR	1	<R>
Q3,Q4		2SD1819AQR	TRANSISTOR	2	<R>
Q5		2SK374-R	TRANSISTOR	1	(Q,R)<R>
Q6		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q7		UN5214	TRANSISTOR	1	<R>
Q8		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q10		2SD1819AQR	TRANSISTOR	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q11-14		UN5213	TRANSISTOR-RESISTOR	4	<R>
Q15		UN5113	TRANSISTOR	1	<R>
Q301-03		UN5213	TRANSISTOR-RESISTOR	3	<R>
Q304		2SD1819AQR	TRANSISTOR	1	<R>
Q305		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q306		UN5113	TRANSISTOR	1	<R>
Q307-09		UN5213	TRANSISTOR-RESISTOR	3	<R>
Q310		UN5113	TRANSISTOR	1	<R>
Q311-21		UN5213	TRANSISTOR-RESISTOR	11	<R>
Q322,23		2SB1218AQR	TRANSISTOR	2	<R>
Q324		2SD1819AQR	TRANSISTOR	1	<R>
Q325-27		UN5213	TRANSISTOR-RESISTOR	3	<R>
Q328,29		UN5215	TRANSISTOR	2	<R>
Q330-33		UN5213	TRANSISTOR-RESISTOR	4	<R>
Q334		2SD1819AQR	TRANSISTOR	1	<R>
			RESISTORS		
R2		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R3		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R4		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R5		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R6		ERJ8GCYJ221	M.RESISTOR CH 1/8W 220	1	
R7		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R8		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R9		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R10		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R11		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R12		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R13		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R14		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R15,16		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	2	
R17		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R18		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R19		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R20-22		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	3	
R23		VRE0034E104	M.RESISTOR CH 1/10W 100K	1	
R24		VRE0034E272	M.RESISTOR CH 1/10W 2.7K	1	
R25		VRE0034E104	M.RESISTOR CH 1/10W 100K	1	
R26		VRE0034E272	M.RESISTOR CH 1/10W 2.7K	1	
R27		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R28		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R29		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R30		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R31		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R32		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R33		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R34		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R35,36		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R37		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R38		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R39		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R40		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R41		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R42		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R43		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R45		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R46		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R47		ERJ3GEYJ184	M.RESISTOR CH 1/16W 180K	1	
R48		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R49		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R50		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R51		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R52		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R53		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R54		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R55-57		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	3	
R58		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R59		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R60		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R61		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R62		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R63		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R64		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R65		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R66,67		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R69		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R70		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R71		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R72		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R73		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R74		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R75		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R76,77		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R78		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R79		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R80		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R81		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R82		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R87		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R88		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R89		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R93,94		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	2	
R97-99		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	3	
R100		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R101,02		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	2	
R103		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R104		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R105		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R106		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R108		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R109		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R110-12		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	3	
R113		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R114		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R115,16		VRE0034E273	M.RESISTOR CH 1/10W 27K	2	
R117		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R118		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R120		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R121		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R122		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R125		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R126		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R127		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R128		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R129		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R130		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R131		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R132		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R133		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R134		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R135		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R136		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R137		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	1	
R138,39		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R140		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R141		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R142,43		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	2	
R144		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R145		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R146		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R147		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R148		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R149		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R150,51		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R152		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R153		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R154		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R155		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R156		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R157-59		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R160		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R164-68		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	5	
R169		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R170		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R171		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R174		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R175		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R176,77		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R178		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R179		ERJ3GEYJ184	M.RESISTOR CH 1/16W 180K	1	
R181		ERJ8GCYJ221	M.RESISTOR CH 1/8W 220	1	
R183		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R184		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R185		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R301		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R302		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R303		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R304		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R305		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R306		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R307		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R308		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R309		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R310		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R313,14		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R315,16		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	
R317		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R318		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R319		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R320		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R321		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R322		VRE0034E112	M.RESISTOR CH 1/10W 1.1K	1	
R323		VRE0034E432	M.RESISTOR CH 1/10W 4.3K	1	
R324		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R325		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R326,27		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R328		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R329		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R330		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R331		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R332		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R333		VRE0034E242	M.RESISTOR CH 1/10W 2.4K	1	
R334-39		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	6	
R341		ERJ3GEYK155	M.RESISTOR CH 3W 1.5M	1	
R342		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R343		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R344		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R345		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R346		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R347		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R348		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R349		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R350		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R351		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R352		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R353		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R354		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R355,56		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	2	
R357-60		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	4	
R361		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R362		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R363		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R364		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R365		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R366		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R367		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R368		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R369		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R370		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R371		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R372		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R373		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R374		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R375,76		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	2	
R377		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R378,79		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R380,81		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	2	
R382		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R383,84		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	
R385		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R386		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R387,88		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R389		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R390		ERJ3GEYK155	M.RESISTOR CH 3W 1.5M	1	
R391		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R392		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
SW1		VSS0367-04TB	SWITCH	1	<R>
VR1		EVM7JSX30B15	V.RESISTOR 100K	1	
VR2		EVM7JSX30B54	V.RESISTOR 50K	1	
VR3		EVM7JSX30B24	V.RESISTOR 20K	1	
VR301		EVM7JSX30B23	V.RESISTOR 2K	1	
VR302		EVM7JSX30B24	V.RESISTOR 20K	1	
X1		VSX0126	CRYSTAL OSCILLATOR	1	<R>
X2		VSX0163	CRYSTAL OSCILLATOR	1	<R>
	■	VEP80735A	P.C.BOARD W/COMPONENT		
			VIDEO MOTHER		
CN1-N3		VJP3375	CONNECTOR (MALE)	3	
P1		VJS3423B030	CONNECTOR (FEMALE)	1	
P2		VJS3423B018	CONNECTOR (FEMALE)	1	
P3		VJP1600T	CONNECTOR (MALE) 7P	1	
P5		VJP1603T	CONNECTOR (MALE) 10P	1	
P6		VJP1923T	CONNECTOR	1	
P9		VJP1600T	CONNECTOR (MALE) 7P	1	
P11		VJS3423B016	CONNECTOR (FEMALE)	1	
	■	VEP83163B	P.C.BOARD W/COMPONENT		
			VIDEO 1		
			CAPACITORS		
C1		ECEV0JN470S	E.CAPACITOR 6.3V 47U	1	
C2		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C3		ECA0JM102	E.CAPACITOR 6.3V	1	
C4		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C5		ECA0JM102	E.CAPACITOR 6.3V	1	
C6		ECUX1H150JCV	C.CAPACITOR 50V 15P	1	
C7,C8		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C9		VCC0037F432	C.CAPACITOR 432P	1	
C10		VCC0037F301	C.CAPACITOR 301P	1	
C12		ECEV0JN470S	E.CAPACITOR 6.3V 47U	1	
C13		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C14		VCM0047	M.CAPACITOR	1	
C15		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C17-19		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C20		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C21		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C22		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C23,24		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	2	
C25		ECUX1H040CCV	C.CAPACITOR CH 50V 4P	1	
C26		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C28		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C29		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C30		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C31		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C33,34		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C36		VCC0037F432	C.CAPACITOR 432P	1	
C38		VCC0037F301	C.CAPACITOR 301P	1	
C39		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C40		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C41		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C42		VCM0023	M.CAPACITOR 379P	1	
C44-47		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	4	
C48		ECUM1H220JTV	C.CAPACITOR CH 50V 22P	1	
C49-51		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	3	
C52		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C53		ECUX1H070DCV	C.CAPACITOR 50V 7P	1	
C54		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C55		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C57,58		ECUX1H150JCV	C.CAPACITOR 50V 15P	2	
C59-62		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	4	
C63		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C64		ECUX1H150JCV	C.CAPACITOR 50V 15P	1	
C65		ECUX1H020CCV	C.CAPACITOR 50V 2P	1	
C66		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C67		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C69		ECUX1H080DCV	C.CAPACITOR CH 50V 8P	1	
C70		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C71		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C72,73		ECUX1H100DCV	C.CAPACITOR 50V 10P	2	
C74-77		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	4	
C78		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C79		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C80		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C81-83		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C84		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C85		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C86,87		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C88		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C89		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C90		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C91		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C92		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C93-95		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C96		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C97		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C98		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C99		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C100,01		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C102		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C103		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C104,05		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C106		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C107		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C108		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C109		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C110		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C111-13		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	
C114		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C115		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C116		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C117		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C118		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C119		ECUX1H271JCV	C.CAPACITOR CH 50V 270P	1	
C120		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C121,22		ECUX1H100DCV	C.CAPACITOR 50V 10P	2	
C123,24		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	2	
C125		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C126		ECUX1H020CCV	C.CAPACITOR 50V 2P	1	
C127		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C128		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C129,30		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C131,32		ECEV0JV470S	E.CAPACITOR 6.3V 47U	2	
CN1		VJS3375	CONNECTOR (FEMALE)	1	
D1		MA736	DIODE	1	<R>
D2		MA141K	DIODE	1	<R>
F1		VLF0932	FUSE	1	
FL2		ELB4D024	FILTER	1	
FL3		ELB4C036	FILTER	1	
IC1		AD848JR	IC	1	<R>
IC2		UPC5022GB056	IC	1	<R>
IC3		AD847JR	IC	1	<R>
IC4,C5		AN6308S	IC	2	<R>
IC6,C7		AN6330S	IC	2	<R>
L1,L2		VLQ0319K220	COIL 22UH	2	
L3		VLQ0163J330	COIL 33UH	1	
L4		VLQ0163J221	COIL 220UH	1	
L5		VLQ0133J331	COIL 330UH	1	
L8		VLQ0163J330	COIL 33UH	1	
L9		VLQ0163J2R7	COIL 2.7UH	1	
L11		VLQ0319K220	COIL 22UH	1	
L12		VLQ0163J120	COIL 12UH	1	
L13		VLQ0163J100	COIL 10UH	1	
L14		VLQ0163J680	COIL 68UH	1	
L15		VLQ0319K220	COIL 22UH	1	
L16,17		VLQ0319K101	COIL 100UH	2	
L18		VLQ0133J561	COIL 560UH	1	
L19		VLQ0163J120	COIL 12UH	1	
P371,72		VJP1233T	CONNECTOR (MALE) 6P	2	
Q1		2SA1532-BC	TRANSISTOR	1	<R>
Q2-Q4		2SC3930-BC	TRANSISTOR	3	<R>
Q5		2SA1532-BC	TRANSISTOR	1	<R>
Q6		2SC3932	TRANSISTOR	1	<R>
Q7		2SA1610	TRANSISTOR	1	<R>
Q8,Q9		2SC3930-BC	TRANSISTOR	2	<R>
Q10,11		2SC3930-BC	TRANSISTOR	2	<R>
Q12		2SA1532-BC	TRANSISTOR	1	<R>
Q13		2SC3932	TRANSISTOR	1	<R>
Q14		2SA1610	TRANSISTOR	1	<R>
Q15-17		UN5113	TRANSISTOR	3	<R>
Q18,19		UN5213	TRANSISTOR-RESISTOR	2	<R>
Q20,21		UN5113	TRANSISTOR	2	<R>
Q22,23		UN5213	TRANSISTOR-RESISTOR	2	<R>
Q24-30		2SA1532-BC	TRANSISTOR	7	<R>
Q31,32		2SC3356	TRANSISTOR	2	<R>
Q33		UN2221	TRANSISTOR-RESISTOR	1	<R>
Q34		2SD1824	TRANSISTOR	1	<R>
Q35,36		2SC3356	TRANSISTOR	2	<R>
Q37		UN2221	TRANSISTOR-RESISTOR	1	<R>
Q38		2SD1824	TRANSISTOR	1	<R>
Q39		2SC3930-BC	TRANSISTOR	1	<R>
Q40-46		2SA1532-BC	TRANSISTOR	7	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q47,48		2SC3356	TRANSISTOR	2	<R>
Q49		UN2221	TRANSISTOR-RESISTOR	1	<R>
Q50		2SD1824	TRANSISTOR	1	<R>
Q51,52		2SC3356	TRANSISTOR	2	<R>
Q53		UN2221	TRANSISTOR-RESISTOR	1	<R>
Q54		2SD1824	TRANSISTOR	1	<R>
Q55		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q56		UN5113	TRANSISTOR	1	<R>
Q57,58		UN5112	TRANSISTOR	2	<R>
Q59,60		2SD1979	TRANSISTOR	2	<R>
Q61		2SC3930-BC	TRANSISTOR	1	<R>
Q62		2SC3937	TRANSISTOR	1	<R>
Q63,64		2SC3930-BC	TRANSISTOR	2	<R>
Q65,66		2SD1979	TRANSISTOR	2	<R>
Q67		2SC3930-BC	TRANSISTOR	1	<R>
Q68		2SC3937	TRANSISTOR	1	<R>
Q69-71		2SC3930-BC	TRANSISTOR	3	<R>
Q72,73		2SD1979	TRANSISTOR	2	<R>
Q74		2SC3930-BC	TRANSISTOR	1	<R>
Q75		2SC3937	TRANSISTOR	1	<R>
Q76,77		2SC3930-BC	TRANSISTOR	2	<R>
Q78,79		2SD1979	TRANSISTOR	2	<R>
Q80		2SC3930-BC	TRANSISTOR	1	<R>
Q81		2SC3937	TRANSISTOR	1	<R>
Q82-89		2SC3930-BC	TRANSISTOR	8	<R>
Q90		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q91		2SB621-R	TRANSISTOR	1	(Q,R)<R>
Q92		UN5213	TRANSISTOR-RESISTOR	1	<R>
			RESISTORS		
R2		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R3		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R5		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R6		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R7		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R8		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R9		VRE0034E43A	M.RESISTOR CH 1/10W	1	
R10		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R11		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R12		VRE0034E82A	M.RESISTOR CH 1/10W	1	
R13		VRE0034E89A	M.RESISTOR CH 1/10W 825	1	
R14		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R15		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R16		VRE0034E26A	M.RESISTOR CH 1/10W 182	1	
R19		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R20		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R21		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R22,23		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R24		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R25		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R26		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R27,28		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	2	
R29,30		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	2	
R31		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R32		VRE0034E751	M.RESISTOR CH 1/10W 750	1	
R33		VRE0034E27B	M.RESISTOR CH 1/10W 1.87K	1	
R34		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R35		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R36		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R37		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R38		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R39		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R40		VRE0034E27B	M.RESISTOR CH 1/10W 1.87K	1	
R41		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R42		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R43,44		VRE006645820	M.RESISTOR CH 1/10W 82	2	
R45		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R46		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R47		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R48		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R49		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R50		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R51		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R52		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R54		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R55		VRE0034E43A	M.RESISTOR CH 1/10W	1	
R56		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R57		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R58		VRE0034E82A	M.RESISTOR CH 1/10W	1	
R59		VRE0034E89A	M.RESISTOR CH 1/10W 825	1	
R60		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R61		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R62		VRE0034E26A	M.RESISTOR CH 1/10W 182	1	
R65		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R66		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R67		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R68		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R69,70		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R71		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R72		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R73		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R74,75		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	2	
R76,77		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	2	
R78		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R79		VRE0034E751	M.RESISTOR CH 1/10W 750	1	
R80		VRE0034E27B	M.RESISTOR CH 1/10W 1.87K	1	
R81		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R82		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R83		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R84		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R85		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R86,87		VRE006639560	M.RESISTOR CH 1/10W 56	2	
R88		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R89		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R90		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R91		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R92-95		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	4	
R96		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R97		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R98		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R99		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R100		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R101		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R102		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R103		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R104		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R105		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R106		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R107		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R108,09		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R110		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R111		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R112		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R113,14		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R115		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R116,17		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	2	
R118		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	1	
R119		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R120		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R121		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	1	
R122		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R123		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	1	
R124		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R125		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R126		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	1	
R127		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R128,29		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R130		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R131		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R132		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R133		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R134		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R135		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R136		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R137		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R138		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R139		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R140		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R141		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R142		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R143		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R144		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R145		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R146		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R147		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R148		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R149,50		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R151		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R152,53		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	2	
R154		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R155		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R156,57		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	2	
R158		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R159		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R160		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R161,62		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	2	
R163		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R164		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R165		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R166		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R167		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R168		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R169		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R170		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R171		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R172		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R173		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R174		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R175		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R176		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R177		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R178		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R179		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R180		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R181		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R182		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R183		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R184		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R185		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R186		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R187,88		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	2	
R189		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R190		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R191		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R192		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R193		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R194		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R195		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R196		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R197		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R198		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R199		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R200		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R201		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R202		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R203		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R204		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R205		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R206		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R207		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R208		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R209		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R210		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R211		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R212		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R213		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R214		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R215		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R216,17		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	2	
R218		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R219		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R220		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R221		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R222		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R223		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R224		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R225		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R226,27		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R228		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R229		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R230		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R231,32		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R233		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R234		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R235		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R236		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R237		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R238		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R239		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R240		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R241		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R242		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R243		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R244		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R245		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R246		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R247		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R249,50		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R253		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R254		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R255		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R256		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R257,58		ERJ3GEYJ471	M.RESISTOR 1/16W 470	2	
R259,60		ERJ3GEYJ222	M.RESISTOR 1/16W 2.2K	2	
R261		ERJ3GEYJ334	M.RESISTOR 1/16W 330K	1	
R262		ERJ3GEYJ471	M.RESISTOR 1/16W 470	1	
T1-T8		VLT0690	TRANSFORMER	8	
VC1-C4		VCV0031	TRIMMER	4	
VR1,R2		VRV0109B102	V.RESISTOR 1K	2	
VR3		VRV0109B502	V.RESISTOR 5K	1	
VR4		VRV0109B102	V.RESISTOR 1K	1	
VR5		VRV0109B103	V.RESISTOR 10K	1	
VR7,R8		VRV0111B204	V.RESISTOR 200K	2	
VR9		VRV0109B103	V.RESISTOR 10K	1	
VR10		VRV0109B202	V.RESISTOR 2K	1	
VR11		VRV0109B102	V.RESISTOR 1K	1	
VR12		VRV0109B502	V.RESISTOR 5K	1	
VR13		VRV0109B102	V.RESISTOR 1K	1	
VR14		VRV0109B103	V.RESISTOR 10K	1	
VR15,16		VRV0111B204	V.RESISTOR 200K	2	
VR17-20		VRV0064B202	V.RESISTOR 2K	4	
VR21,22		VRV0109B202	V.RESISTOR 2K	2	
			MISCELLANEOUS		
		VHN0011	RIVET	2	
		VJF0818	CLAMPER	1	
		VMP1149	P.C.B. ANGLE	1	
		VSC2268	SHIELD CASE A	1	
		VSC2270	SHIELD COVER A	1	
		VSC3744	SHIELD PLATE	1	
		XTV3+6F	SCREW	3	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP83160B	P.C.BOARD W/COMPONENT		
			VIDEO 2		
			CAPACITORS		
C1		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C2		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C3		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C4		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C5		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C6		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C7		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C8		ECUX1H070DCV	C.CAPACITOR 50V 7P	1	
C9		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C12		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C13		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C14		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C16		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C17		ECUX1H181JCV	C.CAPACITOR 50V 180P	1	
C18		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C19		ECUX1H271JCV	C.CAPACITOR CH 50V 270P	1	
C21		ECUX1H180JCV	C.CAPACITOR 50V 18P	1	
C22		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C23,24		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C25		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C26		ECEV1HV2R2S	E.CAPACITOR 50V 2.2U	1	
C27		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C28		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C29		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C30		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C33		ECUX1H331JCV	C.CAPACITOR 50V 330P	1	
C35		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C36		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C37,38		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C39		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C40		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C41		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C42,43		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C44		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C45		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C46		ECUM1E563KBN	C.CAPACITOR CH 25V 0.056U	1	
C47		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C48		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C49		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C50		ECUX1H471JCV	C.CAPACITOR 50V 470P	1	
C51		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C52		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C53		ECUX1H681JV	C.CAPACITOR 50V 680P	1	
C54		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C55		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C56		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C57,58		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C60,61		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C62		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C63		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C64		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C65		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C66		VCC0037F511	C.CAPACITOR 511P	1	
C70		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C71		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C72,73		ECEV0JN470S	E.CAPACITOR 6.3V 47U	2	
C74		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C75,76		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C77		ECUX1H180JCV	C.CAPACITOR 50V 18P	1	
C78		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C79		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C80,81		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C82		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C85		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C86		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C87,88		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C89		VCC0037F301	C.CAPACITOR 301P	1	
C90		ECUX1H060DCV	C.CAPACITOR 50V 6P	1	
C91		VCC0037F301	C.CAPACITOR 301P	1	
C93		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C94		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C95		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C98,99		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C100		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C101		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C102		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C103		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C104,05		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C106,07		ECUX1H392KBV	C.CAPACITOR 50V 3900P	2	
C108		ECEV1CN100S	E.CAPACITOR 16V 10U	1	
C109		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C110		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C111		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C112		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C113-15		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C119		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C120		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C121-23		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C125		ECUX1H180JCV	C.CAPACITOR 50V 18P	1	
C126		ECUX1H560JCV	C.CAPACITOR 50V 56P	1	
C127		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C128		ECUX1H331JCV	C.CAPACITOR 50V 330P	1	
C129		ECUX1H271JCV	C.CAPACITOR CH 50V 270P	1	
C130		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C131,32		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C133		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C134		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C136		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C137		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C138-41		ECEV0JV101S	E.CAPACITOR 6.3V 100U	4	
C142		ECA0JM102	E.CAPACITOR 6.3V	1	
C144		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C145		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C146		ECA0JM102	E.CAPACITOR 6.3V	1	
C148,49		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C150		ECUM1H183KBN	C.CAPACITOR CH 50V 0.018U	1	
C151		ECUX1H472KBV	C.CAPACITOR 50V 4700P	1	
C200		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C201		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C202		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C203		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C204		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C206		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C207		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C208		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C211		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C212,13		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C214,15		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C217		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C218		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C219		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C220		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C221		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C222		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C223		ECUX1H471JCV	C.CAPACITOR 50V 470P	1	
C224		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C225		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C227		ECUX1H331JCV	C.CAPACITOR 50V 330P	1	
C229		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C230		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C231		ECUX1H560JCV	C.CAPACITOR 50V 56P	1	
C232		ECUX1H090DCV	C.CAPACITOR 50V 9P	1	
C233		ECUX1H180JCV	C.CAPACITOR 50V 18P	1	
C235		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C238		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C239		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C240		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C242		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C243		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C244-46		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	3	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C247		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C248		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C249		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C250,51		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C252		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C253		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C254		ECUM1E563KBN	C.CAPACITOR CH 25V 0.056U	1	
C255		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C256		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C257		ECUX1H471JCV	C.CAPACITOR 50V 470P	1	
C258		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C259		ECUX1H681JV	C.CAPACITOR 50V 680P	1	
C260		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C261,62		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C263		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C264-66		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C267		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C268		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C269		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C270		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C271		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C272		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C273		VCC0037F379	C.CAPACITOR 379P	1	
C278		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C279,80		ECEV0JN470S	E.CAPACITOR 6.3V 47U	2	
C281		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C282,83		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C284		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C285		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C286		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C287		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C288		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C289		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C292		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C293		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C294,95		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C296		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C297		VCC0037F301	C.CAPACITOR 301P	1	
C298		ECUX1H060DCV	C.CAPACITOR 50V 6P	1	
C299		VCC0037F301	C.CAPACITOR 301P	1	
C301		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C302		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C304		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C305		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C306		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
CN2		VJS3375	CONNECTOR (FEMALE)	1	
D1-D3		MA141K	DIODE	3	<R>
D4		MA141WK	DIODE	1	<R>
D5-D8		MA141K	DIODE	4	<R>
D11		MA141WA	DIODE	1	<R>
DL1		VLD0190	DELAY	1	
DL2		VLD0199	DELAY	1	
FL1		VLF0658	FILTER	1	
FL2		VLF1042	FILTER	1	
FL3		VLF0714	FILTER	1	
IC1		NJM062M	IC	1	<R>
IC2		MC74HC4053F	IC	1	<R>
IC3		NJM592M8	IC	1	<R>
IC4		NJM319M	IC	1	<R>
IC5		UPD74HC123AG	IC	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC6		MC74HC20F	IC	1	<R>
IC7		MC74HC86F	IC	1	<R>
IC8		AN96A05S	IC	1	<R>
IC9		AD848JR	IC	1	<R>
IC10		AD847JR	IC	1	<R>
IC11,12		MC14053BF	IC	2	(R)<R>
IC13		MM74HC221AM	IC	1	<R>
IC15		AN6308S	IC	1	<R>
IC16		NJM592M8	IC	1	<R>
IC17		NJM319M	IC	1	<R>
IC18		MC74HC20F	IC	1	<R>
IC19		AN96A05S	IC	1	<R>
IC20		AD848JR	IC	1	<R>
IC21		MB10HL116PFF	IC	1	<R>
IC22		MM74HC221AM	IC	1	<R>
IC23		TC4W53F	IC	1	<R>
L1,L2		VLQ0319K101	COIL 100UH	2	
L3		VLQ0163J100	COIL 10UH	1	
L4		VLQ0163J120	COIL 12UH	1	
L7		VLQ0163J100	COIL 10UH	1	
L8		VLQ0163J2R7	COIL 2.7UH	1	
L9		VLQ0163J2R2	COIL 2.2UH	1	
L10		VLQ0163J2R2	COIL 2.2UH	1	
L11		VLQ0163J180	COIL 18UH	1	
L12,13		VLQ0319K101	COIL 100UH	2	
L14		VLQ0163J220	COIL 22UH	1	
L15,16		VLQ0319K101	COIL 100UH	2	
L18		VLQ0163J1R0	COIL 1UH	1	
L21-24		VLQ0319K101	COIL 100UH	4	
L25		VLQ0163J4R7	COIL 4.7UH	1	
L26		VLQ0133J561	COIL 560UH	1	
L27		VLQ0163KR47	COIL 0.47UH	1	
L30,31		VLQ0319K101	COIL 100UH	2	
L33		VLQ0163J120	COIL 12UH	1	
L35		VLQ0163J560	COIL 56UH	1	
L36		VLQ0163J3R9	COIL 3.9UH	1	
L37		VLQ0133J471	COIL 470UH	1	
L38		VLQ0163J560	COIL 56UH	1	
L39		VLQ0163J8R2	COIL 8.2UH	1	
L40		VLQ0163J6R8	COIL 6.8UH	1	
L41		VLQ0163J100	COIL 10UH	1	
L43		VLQ0163J4R7	COIL 4.7UH	1	
L44		VLQ0163J2R7	COIL 2.7UH	1	
L45		VLQ0163J5R6	COIL 5.6UH	1	
L46,47		VLQ0319K101	COIL 100UH	2	
L48		VLQ0163J220	COIL 22UH	1	
L49		VLQ0163J1R5	COIL 1.5UH	1	
L50,51		VLQ0319K101	COIL 100UH	2	
L52,53		VLQ0163J1R0	COIL 1UH	2	
L55,56		VLQ0319K101	COIL 100UH	2	
L57		VLQ0163J181	COIL 180UH	1	
Q1		XN6501	TRANSISTOR-TRANSISTOR	1	<R>
Q2		2SD1819AQR	TRANSISTOR	1	<R>
Q3,Q4		2SA1532-BC	TRANSISTOR	2	<R>
Q5-Q8		2SC3930-BC	TRANSISTOR	4	<R>
Q9		2SA1532-BC	TRANSISTOR	1	<R>
Q10-14		2SC3930-BC	TRANSISTOR	5	<R>
Q15,16		2SA1532-BC	TRANSISTOR	2	<R>
Q17-21		2SC3930-BC	TRANSISTOR	5	<R>
Q22,23		UN5213	TRANSISTOR-RESISTOR	2	<R>
Q24		UN5210	TRANSISTOR	1	<R>
Q25		2SC3938-R	TRANSISTOR	1	<R>
Q26		UN5115	TRANSISTOR	1	<R>
Q27		2SC3930-BC	TRANSISTOR	1	<R>
Q28		2SA1532-BC	TRANSISTOR	1	<R>
Q29		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q30		2SC3932	TRANSISTOR	1	<R>
Q31		2SA1610	TRANSISTOR	1	<R>
Q32		2SC3930-BC	TRANSISTOR	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q33		2SA1532-BC	TRANSISTOR	1	<R>
Q34		2SC3930-BC	TRANSISTOR	1	<R>
Q35		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q36		2SC3932	TRANSISTOR	1	<R>
Q37,38		2SA1610	TRANSISTOR	2	<R>
Q39		2SK662-R	TRANSISTOR	1	<R>
Q40		2SC3938-R	TRANSISTOR	1	<R>
Q41		2SA1610	TRANSISTOR	1	<R>
Q42		2SC3930-BC	TRANSISTOR	1	<R>
Q44		2SD1819AQR	TRANSISTOR	1	<R>
Q45,46		2SA1532-BC	TRANSISTOR	2	<R>
Q47		2SD1819AQR	TRANSISTOR	1	<R>
Q48		2SA1532-BC	TRANSISTOR	1	<R>
Q49		2SC3930-BC	TRANSISTOR	1	<R>
Q50		2SB1114	TRANSISTOR	1	<R>
Q51,52		UN5213	TRANSISTOR-RESISTOR	2	<R>
Q53		2SC3742	TRANSISTOR	1	<R>
Q54		UN5113	TRANSISTOR	1	<R>
Q56		2SB1114	TRANSISTOR	1	<R>
Q57		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q58		2SC3742	TRANSISTOR	1	<R>
Q59		UN5113	TRANSISTOR	1	<R>
Q67		2SA1532-BC	TRANSISTOR	1	<R>
Q70,71		2SA1532-BC	TRANSISTOR	2	<R>
Q72,73		2SC3930-BC	TRANSISTOR	2	<R>
Q74		2SA1532-BC	TRANSISTOR	1	<R>
Q75,76		2SC3930-BC	TRANSISTOR	2	<R>
Q77,78		2SA1532-BC	TRANSISTOR	2	<R>
Q79-85		2SC3930-BC	TRANSISTOR	7	<R>
Q86		UN5210	TRANSISTOR	1	<R>
Q87		2SC3938-R	TRANSISTOR	1	<R>
Q88		UN5115	TRANSISTOR	1	<R>
Q89,90		2SC3930-BC	TRANSISTOR	2	<R>
Q91		2SA1532-BC	TRANSISTOR	1	<R>
Q93		2SC3932	TRANSISTOR	1	<R>
Q94		2SA1610	TRANSISTOR	1	<R>
Q95		2SC3930-BC	TRANSISTOR	1	<R>
Q96		2SA1532-BC	TRANSISTOR	1	<R>
Q97		2SC3932	TRANSISTOR	1	<R>
Q98,99		2SA1610	TRANSISTOR	2	<R>
Q100		2SK662-R	TRANSISTOR	1	<R>
Q101		2SC3938-R	TRANSISTOR	1	<R>
Q102		2SA1610	TRANSISTOR	1	<R>
Q103		2SC3930-BC	TRANSISTOR	1	<R>
Q104,05		2SA1532-BC	TRANSISTOR	2	<R>
Q106		2SC3930-BC	TRANSISTOR	1	<R>
Q107		2SA1532-BC	TRANSISTOR	1	<R>
Q108		2SD1819AQR	TRANSISTOR	1	<R>
Q109		2SC3930-BC	TRANSISTOR	1	<R>
Q110		2SA1532-BC	TRANSISTOR	1	<R>
Q111		2SC3930-BC	TRANSISTOR	1	<R>
Q112		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q113-15		UN5113	TRANSISTOR	3	<R>
Q116		2SA1532-BC	TRANSISTOR	1	<R>
Q117,18		2SC3930-BC	TRANSISTOR	2	<R>
Q119		2SA1532-BC	TRANSISTOR	1	<R>
Q120-22		2SC3930-BC	TRANSISTOR	3	<R>
Q123,24		2SA1532-BC	TRANSISTOR	2	<R>
			RESISTORS		
R1		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R3		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R5		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R6		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R7		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R8		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R9		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R10		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R11		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R12,13		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	2	
R14		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R15		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R16		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R17-20		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	4	
R21		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R22		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R23		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R24		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R25		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R26,27		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R28		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R29		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R30		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R31		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R32		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R33		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R34		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R35,36		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R37,38		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	2	
R39		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R40		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R41,42		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	2	
R43		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R44		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R45		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R46		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R47		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R48,49		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R50		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R51		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R52		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R53		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R54		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R55		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R56		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R57,58		ERJ3GEYJ301	M.RESISTOR CH 3W 300	2	
R59		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R61,62		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R63		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R64		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R65		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R66		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R67,68		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	2	
R69		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R70		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R71		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R73		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R74		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R75		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R76		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R77,78		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	2	
R79		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R80		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R81		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R82		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R83		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R84		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R85		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R86		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R87,88		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R89		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R90		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R91		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R92		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R93		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R94-96		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R98,99		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R100		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R101-03		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R104		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R105		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R106		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R107,08		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R109,10		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R111-13		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	3	
R114		VRE0034E27B	M.RESISTOR CH 1/10W 1.87K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R116		VRE0034E751	M.RESISTOR CH 1/10W 750	1	
R117		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R118		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R119		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R120		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R121		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R122		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R123,24		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	2	
R125		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R126		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R127		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R128		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R129,30		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R132		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R133		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R134		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R135		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R136,37		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R138		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R139		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R140		VRE0034E40A	M.RESISTOR CH 1/10W	1	
R141		VRE0034E751	M.RESISTOR CH 1/10W 750	1	
R142		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R143		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R144		ERJ3GEYG223	M.RESISTOR CH 1/16W 22K	1	
R145,46		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	2	
R147,48		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	2	
R149,50		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	2	
R151		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R153		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R154		VRE0034E24A	M.RESISTOR CH 1/10W	1	
R155		VRE0034E89A	M.RESISTOR CH 1/10W 825	1	
R157		ERJ6GEYG331	M.RESISTOR CH 1/10W 330	1	
R158		VRE0034E59A	M.RESISTOR CH 1/10W 413	1	
R159		VRE0034E102	M.RESISTOR CH 1/10W 1K	1	
R160		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R162		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R163		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R164		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R165		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R166		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R167		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R168		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R169		VRE0034E391	M.RESISTOR CH 1/10W 390	1	
R170		VRE006622102	M.RESISTOR CH 1/10W 1K	1	
R173		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R176		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R177		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R178,79		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R182		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R184		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R185		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R187,88		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R189		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R190		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R191		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R192		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R193		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R194,95		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R196		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R197		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R198		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R199		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R200		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R201		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R202		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R203		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R204		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R207		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R208		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R209		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R210		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R217		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R218,19		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R221		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R222		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R223		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R224,25		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R226-31		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	6	
R232,33		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R234,35		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R236		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R237		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R238		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R239,40		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R241		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R243		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R244		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R245,46		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	2	
R247		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R248		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R249		ERJ6GEYK475	M.RESISTOR CH 1/10W 4.7M	1	
R250		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R251		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R252		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R253		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R254		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R255		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R256		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R257		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R258		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R259		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R260		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R264		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R266		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R268		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	1	
R269,70		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R271		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R272		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R273		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R275		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R276		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R277		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R278		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R279		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R280		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R281		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R282		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R283		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R285-87		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	3	
R289		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R291		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R293		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R294		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R295,96		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	2	
R297		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R298		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R299		ERJ6GEYG181	M.RESISTOR CH 1/10W 180	1	
R300,01		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	2	
R302,03		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R305		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R306		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R307		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R308		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R309		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R310		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R311		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R312		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R313		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R314		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R315		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R316		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R317		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R318		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R319		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R320		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R321,22		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	2	
R323		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R324		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R325		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R326		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R327		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R328		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R329		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R331		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R332,33		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R334		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R335,36		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	2	
R337		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R338		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R339		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R340		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R341		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R342		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R343		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R344		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R345		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R346		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R347		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R348		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R349		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R350		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R351		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R352,53		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	2	
R354		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R355		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R356,57		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R358		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R359		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R360		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R361		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R362,63		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	2	
R364		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R365		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R366		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R367		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R368		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R369		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R370		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R371		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R372,73		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R374		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R375		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R376		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R377		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R378-80		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R381		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R382-84		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R385		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R386		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R387		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R388,89		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R392-94		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	3	
R395		VRE0034E27B	M.RESISTOR CH 1/10W 1.87K	1	
R397		VRE0034E751	M.RESISTOR CH 1/10W 750	1	
R398		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R399		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R400		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R401		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R402		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R403		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R405		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R406		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R407		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R408		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R409		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R410,11		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R413		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R414		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R415		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R416		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R417		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R418,19		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R420		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R421		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R422		VRE0034E40A	M.RESISTOR CH 1/10W	1	
R423		VRE0034E751	M.RESISTOR CH 1/10W 750	1	
R424		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R425		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R426		ERJ3GEYG223	M.RESISTOR CH 1/16W 22K	1	
R427,28		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	2	
R429,30		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	2	
R431,32		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	2	
R433		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R435		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R436		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R437		VRE0034E89A	M.RESISTOR CH 1/10W 825	1	
R438		VRE0034E24A	M.RESISTOR CH 1/10W	1	
R440		ERJ6GEYG331	M.RESISTOR CH 1/10W 330	1	
R441		VRE0034E59A	M.RESISTOR CH 1/10W 413	1	
R442		VRE0034E102	M.RESISTOR CH 1/10W 1K	1	
R443		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R445		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R447		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R448		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R449		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R450		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R451		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R452		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R453		VRE0034E331	M.RESISTOR CH 1/10W 330	1	
R454		VRE006622102	M.RESISTOR CH 1/10W 1K	1	
R455		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R456		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R457		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R458		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R459,60		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R461		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R463,64		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R465		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R466		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R467		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R468		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R470		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R471		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R472		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R473		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R474,75		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	2	
R476		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R477		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R478		ERJ6GEYG683	M.RESISTOR CH 1/10W 68K	1	
R479		ERJ6GEYG103	M.RESISTOR CH 1/10W 10K	1	
R480		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R487		ERJ6GEYG181	M.RESISTOR CH 1/10W 180	1	
VC1		VCV0038	TRIMMER	1	
VC2		VCV0039	TRIMMER	1	
VR1		EVM7JSX30B23	V.RESISTOR 2K	1	
VR2		EVM7JSX30B15	V.RESISTOR 100K	1	
VR3,R4		EVM7JSX30B13	V.RESISTOR 1K	2	
VR5		EVM7JSX30B22	V.RESISTOR 2.2K	1	
VR6,R7		VRV0064B202	V.RESISTOR 2K	2	
VR8,R9		EVM7JSX30B52	V.RESISTOR 500	2	
VR10		EVM7JSX30B53	V.RESISTOR 5K	1	
VR11,12		EVM7JSX30B14	V.RESISTOR 10K	2	
VR13		EVM7JSX30B52	V.RESISTOR 500	1	
VR14		EVM7JSX30B53	V.RESISTOR 5K	1	
VR20		EVM7JSX30B13	V.RESISTOR 1K	1	
VR21		EVM7JSX30B52	V.RESISTOR 500	1	
VR22,23		VRV0064B202	V.RESISTOR 2K	2	
VR24,25		EVM7JSX30B52	V.RESISTOR 500	2	
VR26		EVM7JSX30B53	V.RESISTOR 5K	1	
VR27,28		EVM7JSX30B14	V.RESISTOR 10K	2	
VR29		EVM7JSX30B52	V.RESISTOR 500	1	
VR30		EVM7JSX30B53	V.RESISTOR 5K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			MISCELLANEOUS		
		VHN0011	RIVET	2	
		VMP1149	P.C.B. ANGLE	1	
		VSC3744	SHIELD PLATE	1	
		XTV3+6F	SCREW	3	
	■	VEP83161B	P.C.BOARD W/COMPONENT		
			VIDEO 3		
			CAPACITORS		
C201		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C202		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C203		ECUX1H180JCV	C.CAPACITOR 50V 18P	1	
C204		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C205-07		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	3	
C208		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C209		ECUX1H181JCV	C.CAPACITOR 50V 180P	1	
C210,11		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C212		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C213		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C214		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C215		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C216		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C217		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C218		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C219		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C220		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C221-24		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C227		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C228		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C229		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C230		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C231,32		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C233		ECEV1EN3R3S	E.CAPACITOR 25V 3.3U	1	
C234		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C235		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C236		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C238		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C239		ECUX1H180JCV	C.CAPACITOR 50V 18P	1	
C240		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C241		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C242,43		ECUX1H560JCV	C.CAPACITOR 50V 56P	2	
C244,45		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C246		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C247,48		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C249		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C250		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C251		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C252		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C253		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C254		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C257		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C258		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C259		ECEV1CN100S	E.CAPACITOR 16V 10U	1	
C260		ECHU1C102JA5	P.CAPACITOR 16V 1000P	1	
C261		ECUX1H150JCV	C.CAPACITOR 50V 15P	1	
C262-68		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	7	
C269		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C270		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C271		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C272		ECEV1HN010S	E.CAPACITOR 50V 1U	1	
C273		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C274		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C275		ECUX1H560JCV	C.CAPACITOR 50V 56P	1	
C276		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C277		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C278,79		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C280		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C281		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C282,83		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C284		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C285		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C286		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C287		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C288		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C289		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C290-92		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C293		ECUX1H560JCV	C.CAPACITOR 50V 56P	1	
C717,18		ECEV0JV101S	E.CAPACITOR 6.3V 100U	2	
C719		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C720		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C721		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C722		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C723		ECEV1HV010S	E.CAPACITOR 50V 1U	1	
C724		ECA0JM471	E.CAPACITOR 6.3V 470U	1	
C726,27		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C728		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C729		ECEV1HV010S	E.CAPACITOR 50V 1U	1	
C730		ECA0JM471	E.CAPACITOR 6.3V 470U	1	
C732,33		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C734		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C735		ECEV1HV010S	E.CAPACITOR 50V 1U	1	
C736		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C737		ECUX1H471JCV	C.CAPACITOR 50V 470P	1	
C738		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C739,40		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	2	
C741		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C742		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C743		ECUX1H150JCV	C.CAPACITOR 50V 15P	1	
C748		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C749		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C750-52		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C753		ECEV0GV470S	E.CAPACITOR 4V 47U	1	
C754		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C755		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C756		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C757		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C760		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C761		ECEV0GV470S	E.CAPACITOR 4V 47U	1	
C762-64		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C765		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C766		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C767-69		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C801		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C803		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C804		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C805		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C806		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C807		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C808,09		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C810		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C811		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C812		ECEV1EV4R7S	E.CAPACITOR 25V 4.7U	1	
C813		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C814,15		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C816		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C817		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C818		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C819		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C820		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C823		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C824		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C825		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C826		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C827,28		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C829		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C830		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C831		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C832		ECEV1EV4R7S	E.CAPACITOR 25V 4.7U	1	
C833,34		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	2	
C835		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C836		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C838		ECUX1H270JCV	C.CAPACITOR 50V 27P	1	
C840		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C841		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C842		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C843		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C844,45		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C847		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C848		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C849		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C850		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C851		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C854-56		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C857		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C858		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C859		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C860		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C865,66		ECUX1H680JCV	C.CAPACITOR 50V 68P	2	
C867		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C868		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C869		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C870		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C871,72		ECEV0GV101S	E.CAPACITOR CH 4V 100U	2	
C878		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C879-82		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C951		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C952		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C953		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C954		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C955		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C956		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C957		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C958		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C959		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C960		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C961		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C962-65		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C966,67		ECEV0JV470S	E.CAPACITOR 6.3V 47U	2	
CN3		VJS3375	CONNECTOR (FEMALE)	1	
D1,D2		MA141K	DIODE	2	
D201		MA141WK	DIODE	1	
D202		MA141K	DIODE	1	
D203		MA335-R	DIODE	1	
D204-14		MA141K	DIODE	11	
D216,17		MA141K	DIODE	2	
D401-03		MA141K	DIODE	3	
D801		MA141K	DIODE	1	
FL702		VLF0712	FILTER	1	
FL703,04		VLF0753	FILTER	2	
IC201		AN91A12S	IC	1	<R>
IC202		MN53015VZW	IC	1	<R>
IC203		UPD65024F152	IC	1	<R>
IC204		UPD65040F144	IC	1	<R>
IC205		NE521D	IC	1	<R>
IC206,07		MN74HC221S	IC	2	<R>
IC208		MC74HC32AF	IC	1	<R>
IC209		MC14053BF	IC	1	(R)<R>
IC210		NJM062M	IC	1	<R>
IC211		NE521D	IC	1	<R>
IC212		MC74HC04AF	IC	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC213		MC74HC125AF	IC	1	<R>
IC214		MC74HC02AF	IC	1	<R>
IC215-18		NJM062M	IC	4	<R>
IC219		MC74HC74AF	IC	1	<R>
IC220		MC74HC00AF	IC	1	<R>
IC221-23		MC74HC04AF	IC	3	<R>
IC224		MC74HC164F	IC	1	<R>
IC706		MC74HC164F	IC	1	<R>
IC707		MC74HC74AF	IC	1	<R>
IC708		MC74HC00AF	IC	1	<R>
IC709		M51272FP	IC	1	<R>
IC801		NJM062M	IC	1	<R>
IC802		MC14053BF	IC	1	(R)<R>
IC951		AN78N05	IC	1	<R>
L201		VLQ0163J221	COIL 220UH	1	
L202		VLQ0163J390	COIL 39UH	1	
L203-10		VLQ0319K101	COIL 100UH	8	
L211		VLQ0163J221	COIL 220UH	1	
L701,02		VLQ0319K101	COIL 100UH	2	
L703		VLQ0163J180	COIL 18UH	1	
L704		VLQ0163J560	COIL 56UH	1	
L705,06		VLQ0163J470	COIL 47UH	2	
L709		VLQ0319K101	COIL 100UH	1	
L801		VLQ0163J101	COIL 100UH	1	
L802-07		VLQ0319K101	COIL 100UH	6	
L808		VLQ0163J680	COIL 68UH	1	
L809		VLQ0163J150	COIL 15UH	1	
L810		VLQ0163J5R6	COIL 5.6UH	1	
L811		VLQ0163J6R8	COIL 6.8UH	1	
L812-15		VLQ0319K101	COIL 100UH	4	
L818,19		VLQ0319K101	COIL 100UH	2	
P4,P5		VJS2907D025	CONNECTOR (FEMALE)	2	
Q201		2SB1218AQR	TRANSISTOR	1	<R>
Q202,03		2SK608-R	TRANSISTOR	2	<R>
Q701		2SD1819AQR	TRANSISTOR	1	<R>
Q702-07		2SC3930-BC	TRANSISTOR	6	<R>
Q708-10		2SD1819AQR	TRANSISTOR	3	<R>
Q711,12		2SB1218AQR	TRANSISTOR	2	<R>
Q801		2SC3930-BC	TRANSISTOR	1	<R>
Q802-04		2SB1218AQR	TRANSISTOR	3	<R>
Q806,07		2SC3931-CD	TRANSISTOR	2	<R>
Q808		2SA1532-BC	TRANSISTOR	1	<R>
Q809		2SC3930-BC	TRANSISTOR	1	<R>
Q810		2SK663-R	TRANSISTOR	1	<R>
Q811		2SD1819AQR	TRANSISTOR	1	<R>
Q816		XN4501	TRANSISTOR-RESISTOR	1	<R>
Q819		XN4401	TRANSISTOR-RESISTOR	1	<R>
Q820		2SB1218AQR	TRANSISTOR	1	<R>
Q821,22		2SC3931-CD	TRANSISTOR	2	<R>
Q823		2SA1610	TRANSISTOR	1	<R>
Q824		2SC3930-BC	TRANSISTOR	1	<R>
Q825		2SK663-R	TRANSISTOR	1	<R>
Q826		2SD1819AQR	TRANSISTOR	1	<R>
Q827-29		2SC3930-BC	TRANSISTOR	3	<R>
Q831		2SB1218AQR	TRANSISTOR	1	<R>
Q832		2SC3938-R	TRANSISTOR	1	<R>
Q833		2SB1218AQR	TRANSISTOR	1	<R>
Q834		2SC3938-R	TRANSISTOR	1	<R>
Q835		XN4501	TRANSISTOR-RESISTOR	1	<R>
Q838		XN4401	TRANSISTOR-RESISTOR	1	<R>
Q839		XN4501	TRANSISTOR-RESISTOR	1	<R>
Q842		XN4401	TRANSISTOR-RESISTOR	1	<R>
Q843		XN4501	TRANSISTOR-RESISTOR	1	<R>
Q846		XN4401	TRANSISTOR-RESISTOR	1	<R>
Q847		2SB1218AQR	TRANSISTOR	1	<R>
Q848		2SD1819AQR	TRANSISTOR	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q849		2SB1218AQR	TRANSISTOR	1	<R>
Q850		2SD1819AQR	TRANSISTOR	1	<R>
Q851		XN4501	TRANSISTOR-RESISTOR	1	<R>
Q854		XN4401	TRANSISTOR-RESISTOR	1	<R>
Q855		XN4501	TRANSISTOR-RESISTOR	1	<R>
Q858		XN4401	TRANSISTOR-RESISTOR	1	<R>
Q860		2SD1819AQR	TRANSISTOR	1	<R>
Q861		UN5112	TRANSISTOR	1	<R>
Q951		2SB1114	TRANSISTOR	1	<R>
Q952		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q953		2SC3742	TRANSISTOR	1	<R>
Q954		2SB1218AQR	TRANSISTOR	1	<R>
Q955		2SB1114	TRANSISTOR	1	<R>
Q956		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q957		2SB1114	TRANSISTOR	1	<R>
Q958		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q959		2SB1114	TRANSISTOR	1	<R>
Q960		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q961		2SC3742	TRANSISTOR	1	<R>
Q962		2SB1218AQR	TRANSISTOR	1	<R>
Q963		2SB1114	TRANSISTOR	1	<R>
Q964		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q965		2SC3742	TRANSISTOR	1	<R>
Q966		2SB1218AQR	TRANSISTOR	1	<R>
			RESISTORS		
R201		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R202-04		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	3	
R206,07		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	2	
R208		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R209		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R210		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R211		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R212		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R213		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R214		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R215		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R216		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R217		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R218		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R219		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R220		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R222,23		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R225		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R227		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R228		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R229		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R230		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R231		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R232		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R233		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R234		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R235-37		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	3	
R238,39		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	2	
R240		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R241-43		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R244		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R245		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R247		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R248		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R249		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R252		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R253		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R254		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R255		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R256		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R257		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R258		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R259		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R260		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R261,62		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R263		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R264		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R265		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R266		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R267		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R268		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R269-76		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	8	
R277		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R278		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R279		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R280		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R283		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R284		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R285		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R286		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R287		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R288		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R289		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R290		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R291		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R292-96		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	5	
R297		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R298		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R300		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R301		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R302		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R303		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R307-09		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	3	
R312		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R716		ERJ3GEYG241	M.RESISTOR CH 3W 240	1	
R717		ERJ3GEYG331	M.RESISTOR CH 3W 330	1	
R718		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R719		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R720		ERJ3GEYG221	M.RESISTOR CH 1/16W 220	1	
R721		ERJ3GEYG301	M.RESISTOR CH 3W 300	1	
R722		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R723		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R724		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R725		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R726		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R727		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R728		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R729		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R730		ERJ3GEYG221	M.RESISTOR CH 1/16W 220	1	
R731		ERJ3GEYG301	M.RESISTOR CH 3W 300	1	
R732		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R733		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R734		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R735		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R736		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R737		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R738		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R739		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R741		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R743		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R744		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R745		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R746		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R747		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R749		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R750		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R751		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R752		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R753		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R754		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R755		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R756		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R757		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R758		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R759		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R760		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R761		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R764		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R765		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R766		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R768		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R769		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R770		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R771		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R772		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R773		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R774		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R775		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R776		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R779-81		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	3	
R801,02		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R803		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R804		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R805		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R806		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R807		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R808		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R809		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R810		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R813		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R814		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R815		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R816		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R817		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R818		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R819		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R820		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R821		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R822		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R823		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R824		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R825		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R826		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R827		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R828		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R829		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R830		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R839		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R840		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R841		VRE0034E471	M.RESISTOR CH 1/10W 470	1	
R842		VRE0034E152	M.RESISTOR CH 1/10W 1.5K	1	
R843,44		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R845,46		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R847,48		ERJ3GEYJ220	M.RESISTOR CH 1/16W 22	2	
R849		ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	1	
R850		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R851		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R852		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R853		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R854		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R855		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R856		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R857		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R858		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R859		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R860		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R861		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R862		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R863		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R864		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R865		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R866		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R867		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R868		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R869		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R870		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R871,72		ERJ3GEYG301	M.RESISTOR CH 3W 300	2	
R873,74		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R875		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R876		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R877		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R878		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R879		VRE006624472	M.RESISTOR CH 1/10W 4.7K	1	
R880		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R881		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R884		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R885		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R886		VRE0034E471	M.RESISTOR CH 1/10W 470	1	
R887		VRE0034E152	M.RESISTOR CH 1/10W 1.5K	1	
R888		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R890		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R891		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R892		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R893		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R894		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R895		VRE0034E471	M.RESISTOR CH 1/10W 470	1	
R896		VRE0034E152	M.RESISTOR CH 1/10W 1.5K	1	
R897		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R898		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R899,00		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R901,02		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R903,04		ERJ3GEYJ220	M.RESISTOR CH 1/16W 22	2	
R905		ERJ3GEYJ750	M.RESISTOR CH 1/16W 75	1	
R906,07		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R908,09		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R910,11		ERJ3GEYJ220	M.RESISTOR CH 1/16W 22	2	
R912		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R913		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R914,15		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R916,17		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R918,19		ERJ3GEYJ220	M.RESISTOR CH 1/16W 22	2	
R920		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R921		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R922		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R923		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R924		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R925		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R926		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R927		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R928		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R929		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R930		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R931		VRE0034E122	M.RESISTOR CH 1/10W 1.2K	1	
R932,33		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R934,35		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R936,37		ERJ3GEYJ220	M.RESISTOR CH 1/16W 22	2	
R938		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R939		VRE0034E122	M.RESISTOR CH 1/10W 1.2K	1	
R940,41		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R942,43		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R944,45		ERJ3GEYJ220	M.RESISTOR CH 1/16W 22	2	
R946		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R948		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R949		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R950		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R951		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R952		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R953		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R954		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R955		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R956		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R957		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R958		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R959		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R960		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R961		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R962		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R963		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R964		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R965		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R966		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R967		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R968		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R969		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R971		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R972		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R975		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R976,77		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	2	
R978		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R981		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R982,83		ERJ3GEYJ390	M.RESISTOR CH 1/16W 39	2	
R984		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R985-88		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	4	
R989		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R990		VRE0034E272	M.RESISTOR CH 1/10W 2.7K	1	
R991		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R992		VRE0034E272	M.RESISTOR CH 1/10W 2.7K	1	
R993-96		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	4	
R997,98		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
SW202		VSR0045	SWITCH	1	<R>
SW801		VSS0283	SWITCH	1	<R>
VC201		VCV0039	TRIMMER	1	
VC701		VCV0038	TRIMMER	1	
VR201		EVM7JSX30B24	V.RESISTOR 20K	1	
VR202		EVM7JSX30B14	V.RESISTOR 10K	1	
VR204-07		VRV0064B502	V.RESISTOR 5K	4	
VR701,02		VRV0064B103	V.RESISTOR 10K	2	
VR703		EVM7JSX30B13	V.RESISTOR 1K	1	
VR704,05		VRV0064B202	V.RESISTOR 2K	2	
VR706		EVM7JSX30B13	V.RESISTOR 1K	1	
VR801		EVM7JSX30B13	V.RESISTOR 1K	1	
VR802,03		VRV0064B202	V.RESISTOR 2K	2	
VR804-06		EVM7JSX30B13	V.RESISTOR 1K	3	
VR807,08		VRV0064B202	V.RESISTOR 2K	2	
X201		VSX0114	CRYSTAL OSCILLATOR	1	<R>
X202		VSX0270	CRYSTAL OSCILLATOR	1	<R>
X203,04		VSX0567	CRYSTAL OSCILLATOR	2	<R>
			MISCELLANEOUS		
		VMP1149	P.C.B. ANGLE	1	
		XTV3+6F	SCREW	3	
	■	VEP83162B	P.C.BOARD W/COMPONENT		
			VIDEO 4		
			CAPACITORS		
C1-C3		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C4,C5		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C6-C9		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C10-37		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	28	
C38		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C39		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C40		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C41		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C42-44		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C51		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C52		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C53		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C54		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C55		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C56		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C57		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C58		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C59		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C60		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C61		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C62		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C63		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C64		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C65		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C66		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C67		ECEV0GV470S	E.CAPACITOR 4V 47U	1	
C68		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C71		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C73		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C74		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C75		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C76		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C77		ECEV1HVR47S	E.CAPACITOR 50V 0.47U	1	
C78		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C79		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C80		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C82		ECEV0GV470S	E.CAPACITOR 4V 47U	1	
C83		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C84		ECEV0GV470S	E.CAPACITOR 4V 47U	1	
C85		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C86		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C87		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C88		ECUX1H181JCV	C.CAPACITOR 50V 180P	1	
C89		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C93		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C94		ECEV1CN100S	E.CAPACITOR 16V 10U	1	
C95		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C96		ECUX1H180JCV	C.CAPACITOR 50V 18P	1	
C97		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C98		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C99		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C100		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C103		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C104		ECUX1H391JCV	C.CAPACITOR 50V 390P	1	
C107		ECUX1H391JCV	C.CAPACITOR 50V 390P	1	
C108		ECUX1H821JV	C.CAPACITOR CH 50V 820P	1	
C109,10		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C111		ECEV0GV470S	E.CAPACITOR 4V 47U	1	
C112		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C115		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C117		ECUX1H050CCV	C.CAPACITOR CH 50V 5P	1	
C118		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C119		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C120		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C121		ECEV1HVR22SR	E.CAPACITOR 50V 0.22U	1	
C122		ECUX1H100DCV	C.CAPACITOR 50V 10P	1	
C123		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C124		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C126		ECEV0GV470S	E.CAPACITOR 4V 47U	1	
C127		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C128		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C129		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C130		ECEV0GV470S	E.CAPACITOR 4V 47U	1	
C131		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C132		ECUX1H121JCV	C.CAPACITOR 50V 120P	1	
C133		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C136		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C139		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C140		ECEV0JN220SP	E.CAPACITOR 6.3V 22U	1	
C141,42		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	2	
C143		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C144		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C145		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C146		ECUX1H391JCV	C.CAPACITOR 50V 390P	1	
C149		ECUX1H391JCV	C.CAPACITOR 50V 390P	1	
C150		ECUX1H821JV	C.CAPACITOR CH 50V 820P	1	
C151		ECUX1H030CCV	C.CAPACITOR CH 50V 3P	1	
C153,54		ECUX1H680JCV	C.CAPACITOR 50V 68P	2	
C155		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C156		ECUX1H121JCV	C.CAPACITOR 50V 120P	1	
C157		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C158		ECUX1H121JCV	C.CAPACITOR 50V 120P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C401		ECUX1H561JCV	C.CAPACITOR 50V 560P	1	
C402		ECHU1C223JA5	P.CAPACITOR 16V 0.022U	1	
C403		ECUX1H471JCV	C.CAPACITOR 50V 470P	1	
C404		ECUX1H561JCV	C.CAPACITOR 50V 560P	1	
C405		ECUX1H560JCV	C.CAPACITOR 50V 56P	1	
C406		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C407		ECUX1H561JCV	C.CAPACITOR 50V 560P	1	
C408		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C409-11		ECUX1H561JCV	C.CAPACITOR 50V 560P	3	
C412		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C413		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C414-21		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	8	
C501		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C502		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C503		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C504		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C505		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C506		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C507		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C508		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C509		ECUX1H122KBV	C.CAPACITOR CH 50V 1200P	1	
C510		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C511		ECEV1CN100S	E.CAPACITOR 16V 10U	1	
C512		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C513-15		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C516		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C517		ECUX1H471JCV	C.CAPACITOR 50V 470P	1	
C519		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C520		ECUX1H561JCV	C.CAPACITOR 50V 560P	1	
C521		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C523,24		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C527		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C528		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C529		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C530		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C531		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C532,33		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	2	
C534		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C535,36		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	2	
C537		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C538		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C539		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C540		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C541		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C542,43		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C544		ECUX1H680JCV	C.CAPACITOR 50V 68P	1	
C545-58		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	14	
C559		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C560		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C561		ECHU1C223JA5	P.CAPACITOR 16V 0.022U	1	
C562		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C563		ECUX1H470JCV	C.CAPACITOR 50V 47P	1	
C564		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C565		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C567		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C568		ECEV1CN100S	E.CAPACITOR 16V 10U	1	
C569		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C570		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C701		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C702		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C703		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C704		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C705		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C706		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C707		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C708		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C709		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C710		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C711		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C714-16		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
D51,52		MA141WK	DIODE	2	<R>
D404		MA141K	DIODE	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D501		MA143	DIODE	1	<R>
D505,06		MA335-R	DIODE	2	<R>
D507,08		MA141K	DIODE	2	<R>
FL51		VLF1015	FILTER	1	
FL52		VLF0895	FILTER	1	
FL53,54		VLF0941C223	FILTER	2	
FL501		VLF0941C223	FILTER	1	
FL701		VLF0941C223	FILTER	1	
FL705		VLF0941C223	FILTER	1	
IC1-C3		HM63021FP	IC	3	<R>
IC7-C9		SN7HC574AB	IC	3	<R>
IC10-12		SN7HC574AB	IC	3	<R>
IC13		UPD65013FA44	IC	1	<R>
IC14		SN7HC08AB	IC	1	<R>
IC15		SN7ALS04BB	IC	1	<R>
IC16		SN7HC74AB	IC	1	<R>
IC18		MD-3127	IC	1	<R>
IC19		SN7HC574AB	IC	1	<R>
IC20,21		MSM76H012GSK	IC	2	<R>
IC22		SN7HC574AB	IC	1	<R>
IC23		MD-3127	IC	1	<R>
IC24		SN7ALS02B	IC	1	<R>
IC25		MSM71056	IC	1	<R>
IC26		VSI1259	IC	1	<R>
IC27		SN7LS123B	IC	1	<R>
IC28		SN7HC00AB	IC	1	<R>
IC29		SN7HC08AB	IC	1	<R>
IC30		SN7HC74AB	IC	1	<R>
IC51,52		AN91A12S	IC	2	<R>
IC53,54		TL062CDB	IC	2	<R>
IC55,56		CXD1175AM	IC	2	<R>
IC57		NE521D	IC	1	<R>
IC58		SN7LS123B	IC	1	<R>
IC59		SN7HC08AB	IC	1	<R>
IC401		SN7HC86AB	IC	1	<R>
IC402		SN74LS221NS	IC	1	<R>
IC403		SN7HC00AB	IC	1	<R>
IC404		UPD65022B264	IC	1	<R>
IC405		SN75452BPS	IC	1	<R>
IC406		UPC319G2	IC	1	<R>
IC407		SN7HC04AB	IC	1	<R>
IC408,09		SN7LS123B	IC	2	<R>
IC410		SN7HC00AB	IC	1	<R>
IC411		UPD65022C252	IC	1	<R>
IC501		MC74HC4053F	IC	1	<R>
IC502		TL062CDB	IC	1	<R>
IC503		NJM3415M	IC	1	<R>
IC504		TL062CDB	IC	1	<R>
IC505		MC1648P	IC	1	<R>
IC506		M74F86FP	IC	1	<R>
IC507		SN7HC109AB	IC	1	<R>
IC509		SN7LS123B	IC	1	<R>
IC510		SN74LS221NS	IC	1	<R>
IC511		SN7HC74AB	IC	1	<R>
IC512		SN7HC00AB	IC	1	<R>
IC513		NE521D	IC	1	<R>
IC514		SN7HC125AB	IC	1	<R>
IC515		SN7HC00AB	IC	1	<R>
IC516		UPD65025B030	IC	1	<R>
IC517		UPD65022F258	IC	1	<R>
IC518		SN7ALS04BB	IC	1	<R>
IC519		NJM78L05UA	IC	1	<R>
IC520		SN7LS123B	IC	1	<R>
IC521,22		TC4W53F	IC	2	<R>
IC701-03		MB40778PF	IC	3	<R>
IC705		TL062CDB	IC	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L51-58		VLQ0319K101	COIL 100UH	8	
L59		VLQ0163J221	COIL 220UH	1	
L61		VLQ0163J5R6	COIL 5.6UH	1	
L64		VLQ0163J5R6	COIL 5.6UH	1	
L65		VLQ0319K101	COIL 100UH	1	
L67		VLQ0319K101	COIL 100UH	1	
L69,70		VLQ0163J221	COIL 220UH	2	
L72		VLQ0163J5R6	COIL 5.6UH	1	
L75		VLQ0163J5R6	COIL 5.6UH	1	
L76		VLQ0163J390	COIL 39UH	1	
L77		VLQ0163J100	COIL 10UH	1	
L78		VLQ0163J390	COIL 39UH	1	
L79		VLQ0163J100	COIL 10UH	1	
L501-05		VLQ0319K101	COIL 100UH	5	
L506		VLQ0163JR68	COIL 0.68UH	1	
L508		ERJ6GEYJ680	M.RESISTOR CH 1/10W 68	1	
P4,P5		VJS2907D025	CONNECTOR (FEMALE)	2	
Q51		2SB1218AQR	TRANSISTOR	1	<R>
Q54,55		2SC3931-CD	TRANSISTOR	2	<R>
Q56		2SA1532-BC	TRANSISTOR	1	<R>
Q57		2SC3930-BC	TRANSISTOR	1	<R>
Q59		2SK663-R	TRANSISTOR	1	<R>
Q60		2SD1819AQR	TRANSISTOR	1	<R>
Q61,62		2SB1218AQR	TRANSISTOR	2	<R>
Q63,64		2SC3931-CD	TRANSISTOR	2	<R>
Q65		2SA1532-BC	TRANSISTOR	1	<R>
Q66		2SC3930-BC	TRANSISTOR	1	<R>
Q68		2SK663-R	TRANSISTOR	1	<R>
Q69		2SA1532-BC	TRANSISTOR	1	<R>
Q70		2SD1819AQR	TRANSISTOR	1	<R>
Q501,02		2SD1819AQR	TRANSISTOR	2	<R>
Q503-06		2SB1218AQR	TRANSISTOR	4	<R>
			RESISTORS		
R1		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R2,R3		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	2	
R4,R5		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R7-R9		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	3	
R10		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R11		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R12		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R13		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R14		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R51		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R53		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R54		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R58		ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R62		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R63		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R66		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R67		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R68		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R69		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R70		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R71		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R72		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R73		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R74		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R75		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R78		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R79		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R81		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R82		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R83		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R84		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R85		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R86		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R87		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R88		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R89		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R90,91		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	2	
R92		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R93		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R94		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R95		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R96		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R97		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R98		ERJ3GEYG301	M.RESISTOR CH 3W 300	1	
R99		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R100		ERJ3GEYG301	M.RESISTOR CH 3W 300	1	
R101		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R103		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R104		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R105		ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R106		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R107,08		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	2	
R109		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R110		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R113		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R114		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R115		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R116		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R117		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R118		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R119-21		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	3	
R122		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R125		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R126		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R127		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R128		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R129		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R130,31		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	2	
R132		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R133		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R135,36		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R137		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R138		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R139		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R140		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R141		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R142		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R143		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R144		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R145		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R146		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R147		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R148		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R149		ERJ3GEYG301	M.RESISTOR CH 3W 300	1	
R150		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R151		ERJ3GEYG301	M.RESISTOR CH 3W 300	1	
R152		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R153		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R161		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R162		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R163		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R164		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R165,66		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R167		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R168		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R401		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R402		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R403		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R404		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R405		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R406		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R407		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R408		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R409		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R410		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R411		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R412		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R413		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R414		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R415		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R417		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R419		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R420		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R421		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R422		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R423		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R424		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R425		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R426		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R427		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R428		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R429		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R501		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R502		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R503		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R504		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R505		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R506		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R507		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R508		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R509,10		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	2	
R511		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R512		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R513		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R514		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R515		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R516		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R517		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R518		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R519		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R520		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R521		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R522		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R523,24		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R525		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R526		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R527		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R528		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R529,30		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	2	
R531		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R532		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R533,34		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	2	
R535-37		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	3	
R538		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R539		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R540-43		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	4	
R545,46		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R549,50		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R552		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R555		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R556		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R557		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R701		VRE006605102	M.RESISTOR CH 1/10W 1K	1	
R702		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R706		VRE006605102	M.RESISTOR CH 1/10W 1K	1	
R707		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R711		VRE006605102	M.RESISTOR CH 1/10W 1K	1	
R712		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R713		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R714		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R715		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
RY1		VSQ0796	THERMAL GUARD	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
SW2		VSS0367-08	SWITCH	1	<R>
SW3		VSS0367-06TB	SWITCH	1	<R>
VR51		EVM7JSX30B23	V.RESISTOR 2K	1	
VR52		EVM7JSX30B53	V.RESISTOR 5K	1	
VR53		EVM7JSX30B23	V.RESISTOR 2K	1	
VR54		EVM7JSX30B53	V.RESISTOR 5K	1	
VR401		EVM7JSX30B53	V.RESISTOR 5K	1	
VR501		EVM7JSX30B53	V.RESISTOR 5K	1	
VR502		VRV0109B203	V.RESISTOR 20K	1	
VR503-05		EVM7JSX30B23	V.RESISTOR 2K	3	
			MISCELLANEOUS		
		XNG26BFZ	NUT	1	
		XSB26+8FZ	SCREW	1	
		XWA26BFZ	WASHER	1	
		XWG26	WASHER	1	
	■	VEP80736A	P.C.BOARD W/COMPONENT		
			AUDIO MOTHER		
CN4		VJP3375	CONNECTOR (MALE)	1	
P201		VJP1603T	CONNECTOR (MALE) 10P	1	
P202		VJP1923T	CONNECTOR	1	
P204		VJP1603T	CONNECTOR (MALE) 10P	1	
P206		VJP1599T	CONNECTOR (MALE) 6P	1	
P207		VJS2582B014	CONNECTOR (FEMALE)	1	
P208		VJP1598T	CONNECTOR (MALE) 5P	1	
P209		VJP1233T	CONNECTOR (MALE) 6P	1	
P210		VJP1230T	CONNECTOR (MALE) 3P	1	
P211		VJP1600T	CONNECTOR (MALE) 7P	1	
P212		VJP1233T	CONNECTOR (MALE) 6P	1	
P213		VJP1231T	CONNECTOR (MALE) 4P	1	
P214		VJP1597T	CONNECTOR (MALE) 4P	1	
			MISCELLANEOUS		
		VMP3792	P.C.B. ANGLE	1	
		XTV3+6F	SCREW	4	
	■	VEP84145A	P.C.BOARD W/COMPONENT		
			AUDIO		
			CAPACITORS		
C1,C2		ECEV0JV470S	E.CAPACITOR 6.3V 47U	2	
C4,C5		ECEV0JV101S	E.CAPACITOR 6.3V 100U	2	
C6,C7		ECEV0JV470S	E.CAPACITOR 6.3V 47U	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C8		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C9		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C101		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C102		ECEV0GV101S	E.CAPACITOR CH 4V 100U	1	
C103		ECEV1HV010S	E.CAPACITOR 50V 1U	1	
C105,06		ECEV0JV220S	E.CAPACITOR 6.3V 22U	2	
C107		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	1	
C108		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C109		ECUX1H272KBV	C.CAPACITOR 50V 2700P	1	
C110		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C111		ECUX1H682KBV	C.CAPACITOR CH 50V 6800P	1	
C112		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C113		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C114		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C115		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C116,17		ECUX1H182KBV	C.CAPACITOR CH 50V 1800P	2	
C118		ECUM1H822JM	C.CAPACITOR CH 50V 8200P	1	
C119		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C120		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C121		VCC0030	C.CAPACITOR	1	
C122		ECUM1H822JM	C.CAPACITOR CH 50V 8200P	1	
C123		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C125		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C131		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C151,52		ECUM1H222JN	C.CAPACITOR CH 50V 2200P	2	
C153		ECUM1H392JM	C.CAPACITOR CH 50V 3900P	1	
C154		ECST1EY474Z	T.CAPACITOR 25V 0.47U	1	
C155		ECST1VY154Z	T.CAPACITOR 35V 0.15U	1	
C156		ECUM1H153KBV	C.CAPACITOR CH 50V 0.015U	1	
C157		ECST1VY224Z	T.CAPACITOR 35V 0.22U	1	
C158		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C159		ECUM1E563KBN	C.CAPACITOR CH 25V 0.056U	1	
C160		ECUM1H562JM	C.CAPACITOR CH 50V 5600P	1	
C161		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C201		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C202		ECEV0GV101S	E.CAPACITOR CH 4V 100U	1	
C203		ECEV1HV010S	E.CAPACITOR 50V 1U	1	
C205,06		ECEV0JV220S	E.CAPACITOR 6.3V 22U	2	
C207		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	1	
C208		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C209		ECUX1H272KBV	C.CAPACITOR 50V 2700P	1	
C210		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C211		ECUX1H682KBV	C.CAPACITOR CH 50V 6800P	1	
C212		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C213		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C214		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C215		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C216,17		ECUX1H182KBV	C.CAPACITOR CH 50V 1800P	2	
C218		ECUM1H822JM	C.CAPACITOR CH 50V 8200P	1	
C219		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C220		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C221		VCC0030	C.CAPACITOR	1	
C222		ECUM1H822JM	C.CAPACITOR CH 50V 8200P	1	
C223		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C225		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C231		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C251,52		ECUM1H222JN	C.CAPACITOR CH 50V 2200P	2	
C253		ECUM1H392JM	C.CAPACITOR CH 50V 3900P	1	
C254		ECST1EY474Z	T.CAPACITOR 25V 0.47U	1	
C255		ECST1VY154Z	T.CAPACITOR 35V 0.15U	1	
C256		ECUM1H153KBV	C.CAPACITOR CH 50V 0.015U	1	
C257		ECST1VY224Z	T.CAPACITOR 35V 0.22U	1	
C258		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C259		ECUM1E563KBN	C.CAPACITOR CH 25V 0.056U	1	
C260		ECUM1H562JM	C.CAPACITOR CH 50V 5600P	1	
C261		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C301		ECUX1H181JCV	C.CAPACITOR 50V 180P	1	
C302		ECEV0GV101S	E.CAPACITOR CH 4V 100U	1	
C303		ECQB1H473JF	P.CAPACITOR 50V 0.047U	1	
C304		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C305		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C306-08		ECEV0JN100S	E.CAPACITOR 6.3V 10U	3	
C309		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C311		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C312		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C313,14		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	2	
C315		ECUX1H472KBV	C.CAPACITOR 50V 4700P	1	
C316		ECUX1H153KBV	C.CAPACITOR 50V 0.015U	1	
C401		ECUX1H181JCV	C.CAPACITOR 50V 180P	1	
C402		ECEV0GV101S	E.CAPACITOR CH 4V 100U	1	
C403		ECQB1H473JF	P.CAPACITOR 50V 0.047U	1	
C404		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C405		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C407,08		ECEV0JN100S	E.CAPACITOR 6.3V 10U	2	
C409		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C411		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C412		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	1	
C413,14		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	2	
C501-03		ECEV1HVR22S	E.CAPACITOR 50V 0.22U	3	
C504		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C505		ECEV0JV101S	E.CAPACITOR 6.3V 100U	1	
C509-11		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C513		ECEV1EN4R7S	E.CAPACITOR 25V 4.7U	1	
C515		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C521,22		ECEV1CV220S	E.CAPACITOR 16V 22U	2	
C523		ECEV1HN010S	E.CAPACITOR 50V 1U	1	
C524		ECEV1CV220S	E.CAPACITOR 16V 22U	1	
C525,26		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	2	
C527,28		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C529		VCF0045	P.CAPACITOR	1	
C530		ECEV1CV220S	E.CAPACITOR 16V 22U	1	
C531		ECEV1HN010S	E.CAPACITOR 50V 1U	1	
C532,33		ECUX1H472KBV	C.CAPACITOR 50V 4700P	2	
C534		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	1	
C535		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C536		VCF0046	P.CAPACITOR	1	
C537		ECEV1CV220S	E.CAPACITOR 16V 22U	1	
C538		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C601		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C602		ECUM1H272JN	C.CAPACITOR CH 50V 2700P	1	
C603		ECUX1H391JCV	C.CAPACITOR 50V 390P	1	
C604		ECUM1H822JM	C.CAPACITOR CH 50V 8200P	1	
C605		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C606		ECHU1C223JA5	P.CAPACITOR 16V 0.022U	1	
C607		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C608		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C609		ECHU1C103JA5	P.CAPACITOR 16V 0.01U	1	
C610		ECUM1H332JN	C.CAPACITOR CH 50V 3300P	1	
C611,12		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	2	
C613		ECUX1H272KBV	C.CAPACITOR 50V 2700P	1	
C614		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C615		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C616-18		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	3	
C619		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C620		ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C621		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C622		ECEV1EN4R7S	E.CAPACITOR 25V 4.7U	1	
C623		ECUX1H182KBV	C.CAPACITOR CH 50V 1800P	1	
C624		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C625		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C626		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C627		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C631		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C701		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C702		ECUM1H272JN	C.CAPACITOR CH 50V 2700P	1	
C703		ECUX1H391JCV	C.CAPACITOR 50V 390P	1	
C704		ECUM1H822JM	C.CAPACITOR CH 50V 8200P	1	
C705		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C706		ECHU1C223JA5	P.CAPACITOR 16V 0.022U	1	
C707		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C708		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C709		ECHU1C103JA5	P.CAPACITOR 16V 0.01U	1	
C710		ECUM1H332JN	C.CAPACITOR CH 50V 3300P	1	
C711,12		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	2	
C713		ECUX1H272KBV	C.CAPACITOR 50V 2700P	1	
C714		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C715		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C716-18		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	3	
C719		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C720		ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C721		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C722		ECEV1EN4R7S	E.CAPACITOR 25V 4.7U	1	
C723		ECUX1H182KBV	C.CAPACITOR CH 50V 1800P	1	
C724		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C725		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C726		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C727		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C731		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C801		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C802		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C803		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C804		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C805		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C807		ECEV0JV220S	E.CAPACITOR 6.3V 22U	1	
C808		ECUX1H331JCV	C.CAPACITOR 50V 330P	1	
C809		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C810		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C811		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C812		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C813,14		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C815		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C821		ECEV1CV100S	E.CAPACITOR 16V 10U	1	
C901,02		ECEV0JV470S	E.CAPACITOR 6.3V 47U	2	
C903		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C904		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C906		VCC0030	C.CAPACITOR	1	
C907,08		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	2	
C909		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C910		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C911		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C912		ECEV0GV101S	E.CAPACITOR CH 4V 100U	1	
C913		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
CN4		VJS3375	CONNECTOR (FEMALE)	1	
D101		MA141K	DIODE	1	<R>
D201		MA141WA	DIODE	1	<R>
D301		MA141K	DIODE	1	<R>
D303,04		MA704	DIODE	2	<R>
D401		MA141WA	DIODE	1	<R>
D403,04		MA704	DIODE	2	<R>
D501		MA143	DIODE	1	<R>
D502,03		MA141K	DIODE	2	<R>
D511		MA141WA	DIODE	1	<R>
D512,13		MA141K	DIODE	2	<R>
D521		MA141K	DIODE	1	<R>
D523		MA141K	DIODE	1	<R>
D601,02		MA704	DIODE	2	<R>
D701,02		MA704	DIODE	2	<R>
D801		MA141WA	DIODE	1	<R>
D802		MA141WK	DIODE	1	<R>
D901		MA143	DIODE	1	<R>
FL101		EIR7QF011B	FILTER	1	
FL102		EIR7QF012B	FILTER	1	
FL201		EIR7QF011B	FILTER	1	
FL202		EIR7QF012B	FILTER	1	
FL901		EIR7QF012B	FILTER	1	
FL902		EIR7QE016B	FILTER	1	
IC1,C2		BA3308F	IC	2	<R>
IC3		MC14053BF	IC	1	(R)<R>
IC4		CXA1098Q	IC	1	<R>
IC5,C6		NJM062M	IC	2	<R>
IC7-C9		NJM4558M	IC	3	<R>
IC10		NJM4558M	IC	1	<R>
IC11-14		NJM062M	IC	4	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC21		NJM78L05UA	IC	1	<R>
IC22		BA7703K1	IC	1	<R>
IC23-25		NJM062M	IC	3	<R>
IC31		NJM4558M	IC	1	<R>
IC32		NJM062M	IC	1	<R>
L1,L2		VLQ0319K470	COIL 47UH	2	
L101		VLQ0133J102	COIL 1000UH	1	
L201		VLQ0133J102	COIL 1000UH	1	
L301		VLQ0133J102	COIL 1000UH	1	
L302		VLQ0133J331	COIL 330UH	1	
L401		VLQ0133J102	COIL 1000UH	1	
L521		VLQ0319K100	COIL 10UH	1	
L522		VLQ0319K470	COIL 47UH	1	
L601		VLQ0163J820	COIL 82UH	1	
L602		VLQ0133J331	COIL 330UH	1	
L701		VLQ0163J470	COIL 47UH	1	
L702		VLQ0163J221	COIL 220UH	1	
L801		VLQ0319K470	COIL 47UH	1	
Q1		2SD1819AQR	TRANSISTOR	1	<R>
Q2		2SB1218AQR	TRANSISTOR	1	<R>
Q3		2SB1218A-R	TRANSISTOR	1	<R>
Q101		2SD1979	TRANSISTOR	1	<R>
Q102		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q103		2SD1819AQR	TRANSISTOR	1	<R>
Q104		2SB1218AQR	TRANSISTOR	1	<R>
Q105		2SD1819AQR	TRANSISTOR	1	<R>
Q106		2SB1218AQR	TRANSISTOR	1	<R>
Q107		2SD1979	TRANSISTOR	1	<R>
Q108,09		UN5113	TRANSISTOR	2	<R>
Q111		UN5113	TRANSISTOR	1	<R>
Q201		2SD1979	TRANSISTOR	1	<R>
Q202		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q203		2SD1819AQR	TRANSISTOR	1	<R>
Q204		2SB1218AQR	TRANSISTOR	1	<R>
Q205		2SD1819AQR	TRANSISTOR	1	<R>
Q206		2SB1218AQR	TRANSISTOR	1	<R>
Q207		2SD1979	TRANSISTOR	1	<R>
Q208,09		UN5113	TRANSISTOR	2	<R>
Q211		UN5113	TRANSISTOR	1	<R>
Q301		UN5113	TRANSISTOR	1	<R>
Q302		2SD1979	TRANSISTOR	1	<R>
Q303		UN5113	TRANSISTOR	1	<R>
Q304		2SB1220-QR	TRANSISTOR	1	<R>
Q305,06		2SD1821-R	TRANSISTOR	2	<R>
Q307		2SK146	TRANSISTOR	1	(B,L)<R>
Q308		UN5113	TRANSISTOR	1	<R>
Q309		2SD1979	TRANSISTOR	1	<R>
Q310,11		2SD1819AQR	TRANSISTOR	2	<R>
Q312		UN5113	TRANSISTOR	1	<R>
Q313		2SB1218AQR	TRANSISTOR	1	<R>
Q401		UN5113	TRANSISTOR	1	<R>
Q402		2SD1979	TRANSISTOR	1	<R>
Q403		UN5113	TRANSISTOR	1	<R>
Q404		2SB1220-QR	TRANSISTOR	1	<R>
Q405,06		2SD1821-R	TRANSISTOR	2	<R>
Q407		2SK146	TRANSISTOR	1	(B,L)<R>
Q408		UN5113	TRANSISTOR	1	<R>
Q409		2SD1979	TRANSISTOR	1	<R>
Q410,11		2SD1819AQR	TRANSISTOR	2	<R>
Q412		UN5113	TRANSISTOR	1	<R>
Q413		2SB1218AQR	TRANSISTOR	1	<R>
Q501		UN5113	TRANSISTOR	1	<R>
Q502		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q503		UN5113	TRANSISTOR	1	<R>
Q504		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q505		UN5113	TRANSISTOR	1	<R>
Q506		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q507		UN5113	TRANSISTOR	1	<R>
Q508		2SB1218AQR	TRANSISTOR	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q511-13		UN5113	TRANSISTOR	3	<R>
Q514		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q515		2SD1819AQR	TRANSISTOR	1	<R>
Q516		UN5113	TRANSISTOR	1	<R>
Q517-20		UN5213	TRANSISTOR	4	<R>
Q521		UN5113	TRANSISTOR	1	<R>
Q522		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q523		UN5113	TRANSISTOR	1	<R>
Q524		2SB779-QR	TRANSISTOR	1	<R>
Q525,26		2SD874-R	TRANSISTOR	2	<R>
Q527		UN5113	TRANSISTOR	1	<R>
Q528		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q529		UN5113	TRANSISTOR	1	<R>
Q530		2SB779-QR	TRANSISTOR	1	<R>
Q531,32		2SD874-R	TRANSISTOR	2	<R>
Q533		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q601		2SD1819AQR	TRANSISTOR	1	<R>
Q701		2SD1819AQR	TRANSISTOR	1	<R>
Q801		2SD1819AQR	TRANSISTOR	1	<R>
Q802		2SC3931-CD	TRANSISTOR	1	<R>
Q803		2SD1819AQR	TRANSISTOR	1	<R>
Q901,02		UN5113	TRANSISTOR	2	<R>
Q903		2SD1979	TRANSISTOR	1	<R>
Q904		UN5113	TRANSISTOR	1	<R>
Q905		2SD1979	TRANSISTOR	1	<R>
Q906		UN5113	TRANSISTOR	1	<R>
Q907		2SB1220-QR	TRANSISTOR	1	<R>
Q908,09		2SD1821-R	TRANSISTOR	2	<R>
Q910		UN5213	TRANSISTOR-RESISTOR	1	<R>
			RESISTORS		
R1,R2		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R3		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R101-03		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	3	
R104		VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R105		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R106		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R107		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R108		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R109		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R110		ERJ3GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R111		VRE0034E331	M.RESISTOR CH 1/10W 330	1	
R112		VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R113		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R114		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R115		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R116		ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
R117-21		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	5	
R122		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R123		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R124,25		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R126-28		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R129		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R130		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R131		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R132		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R133		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R134		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R135		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R136		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R137,38		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R139,40		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R143		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R144		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R145		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R146		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R147		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R148		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R151		VRE0034E393	M.RESISTOR CH 1/10W 39K	1	
R152		VRE0034E202	M.RESISTOR CH 1/10W 2K	1	
R153		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R154		VRE0034E153	M.RESISTOR CH 1/10W 15K	1	
R155		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R156		VRE0034E332	M.RESISTOR CH 1/10W 3.3K	1	
R157		VRE0034E392	M.RESISTOR CH 1/10W 3.9K	1	
R158		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R159		VRE0034E561	M.RESISTOR CH 1/10W 560	1	
R160		VRE0034E223	M.RESISTOR CH 1/10W 22K	1	
R161		VRE0034E752	M.RESISTOR CH 1/10W 7.5K	1	
R162		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R163		VRE0034E912	M.RESISTOR CH 1/10W 9.1K	1	
R201-03		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	3	
R204		VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R205		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R206		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R207		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R208		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R209		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R210		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R211		VRE0034E331	M.RESISTOR CH 1/10W 330	1	
R212		VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R213		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R214		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R215		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R216		ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
R217,18		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R220,21		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R222		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R223		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R224,25		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R226-28		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R229		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R230		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R231		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R232		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R233		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R234		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R235		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R236		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R237,38		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R239,40		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R243		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R244		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R245		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R246		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R247		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R248		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R251		VRE0034E393	M.RESISTOR CH 1/10W 39K	1	
R252		VRE0034E202	M.RESISTOR CH 1/10W 2K	1	
R253		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R254		VRE0034E153	M.RESISTOR CH 1/10W 15K	1	
R255		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R256		VRE0034E332	M.RESISTOR CH 1/10W 3.3K	1	
R257		VRE0034E392	M.RESISTOR CH 1/10W 3.9K	1	
R258		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R259		VRE0034E561	M.RESISTOR CH 1/10W 560	1	
R260		VRE0034E223	M.RESISTOR CH 1/10W 22K	1	
R261		VRE0034E752	M.RESISTOR CH 1/10W 7.5K	1	
R262		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R263		VRE0034E912	M.RESISTOR CH 1/10W 9.1K	1	
R301		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R302		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R303		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R304		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R305		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R306-08		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	3	
R309		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R310		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R311		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R312		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R313		VRE0034E102	M.RESISTOR CH 1/10W 1K	1	
R314		VRE0034E223	M.RESISTOR CH 1/10W 22K	1	
R315,16		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	
R317		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R318		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R319,20		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R321		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R322		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R323		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R324		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R325		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R326		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R327		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R328		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R329		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R331		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R332		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R333		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R334		VRE0034E124	M.RESISTOR CH 1/10W	1	
R355		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R401		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R402		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R403		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R404		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R405		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R406-08		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	3	
R409		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R410		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R411		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R412		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R417		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R418		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R419,20		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R421		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R422		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R423		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R424		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R425		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R426		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R427		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R428		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R429		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R431		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R432		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R433		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R434		VRE0034E124	M.RESISTOR CH 1/10W	1	
R501		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R502		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R503		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R504		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R505		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R506		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R507		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R508		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R512		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R513		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R514		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R515,16		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R517,18		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R521		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R522		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R523,24		ERJ6GEYJ2R2	M.RESISTOR CH 1/10W 2.2	2	
R525		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R526		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R527		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R528,29		ERJ6GEYJ8R2	M.RESISTOR CH 1/10W 8.2	2	
R530		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R531,32		ERJ3GEYK1R0	M.RESISTOR CH 3W 1.0	2	
R551		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R552		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R601,02		VRE0034E222	M.RESISTOR CH 1/10W 2.2K	2	
R603		VRE0034E182	M.RESISTOR CH 1/10W 1.8K	1	
R604		VRE0034E112	M.RESISTOR CH 1/10W 1.1K	1	
R605		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R606		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R607		VRE0034E562	M.RESISTOR CH 1/10W 5.6K	1	
R608		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R609,10		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R611		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R612		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R613		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R614,15		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R616		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R618		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R619		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R620		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R621		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R622		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R623		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R624		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R625		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R626		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R631		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R632		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R633		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R701,02		VRE0034E222	M.RESISTOR CH 1/10W 2.2K	2	
R703		VRE0034E182	M.RESISTOR CH 1/10W 1.8K	1	
R704		VRE0034E112	M.RESISTOR CH 1/10W 1.1K	1	
R705		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R706		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R707		VRE0034E562	M.RESISTOR CH 1/10W 5.6K	1	
R708		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R709,10		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R711		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R712		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R713		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R714,15		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R716		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R718		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R719		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R720		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R721		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R722		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R723		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R724		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R725		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R731		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R732		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R733		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R801		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R802		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R803		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R805		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R806		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R807		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R808,09		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	
R810		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R811		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R812		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R813		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R814		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R901,02		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R903		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R904		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R905,06		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R907		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R908		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R909		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R910		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R911		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R912		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R913		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R914		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R915		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R916		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R917		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R918		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R919		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R920		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R921		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R922		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R923,24		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R925		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R926		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R927		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC142		MC14053BF	IC	1	(R)<R>
IC143		AD848JR	IC	1	<R>
IC144		MC14053BF	IC	1	(R)<R>
IC165		MC14053BF	IC	1	(R)<R>
IC166		AD848JR	IC	1	<R>
IC201		NJM062M	IC	1	<R>
IC203		MC14538BF	IC	1	<R>
IC204		MC74HC32AF	IC	1	<R>
IC205		NJM319M	IC	1	<R>
IC206		MC74HC11F	IC	1	<R>
IC212		MC14053BF	IC	1	<R>
IC214		AN6041	IC	1	<R>
IC215,16		MC14053BF	IC	2	<R>
IC217		NJM082BM	IC	1	<R>
IC218		MC14053BF	IC	1	<R>
IC219,20		NJM062M	IC	2	<R>
IC224		NJM311M	IC	1	<R>
IC401		MM74HC221AM	IC	1	<R>
IC402		SN74LS221NS	IC	1	<R>
IC403		UPD65013BC16	IC	1	<R>
IC404		MC74HC04AF	IC	1	<R>
IC405		MM74HC221AM	IC	1	<R>
IC406		MC74HC00AF	IC	1	<R>
IC407		MC74HC125AF	IC	1	<R>
IC408		MM74HC221AM	IC	1	<R>
IC501		NJM062M	IC	1	<R>
IC505		AN91A12S	IC	1	<R>
IC601,02		CXD1175AM	IC	2	<R>
IC606		MB40778PF	IC	1	<R>
IC609		NJM78L05UA	IC	1	<R>
IC703		SN74LS221NS	IC	1	<R>
IC704		MC14528BF	IC	1	<R>
IC705		MC74HC74AF	IC	1	<R>
IC706		NJM062M	IC	1	<R>
IC707		TC4W53F	IC	1	<R>
IC709		MC74HC00AF	IC	1	<R>
IC710		SN74LS221NS	IC	1	<R>
IC712		MC74HC14AF	IC	1	<R>
IC714		MC74HC163F	IC	1	<R>
IC781		MM74HC221AM	IC	1	<R>
IC881		MC74HC00AF	IC	1	<R>
IC882		MC74HC04AF	IC	1	<R>
IC883		MC74HC32AF	IC	1	<R>
IC901		TC4W53F	IC	1	<R>
IC909		CF45073P	IC	1	<R>
L1,L2		VLQ0319K101	COIL 100UH	2	
L35		VLQ0163J3R3	COIL 3.3UH	1	
L41		VLQ0163J221	COIL 220UH	1	
L42		VLP0110	COIL	1	
L62,63		VLQ0319K101	COIL 100UH	2	
L64		VLQ0163J221	COIL 220UH	1	
L81		VLQ0163J470	COIL 47UH	1	
L91,92		VLQ0163J2R7	COIL 2.7UH	2	
L93		VLQ0163J151	COIL 150UH	1	
L102		VLQ0319K101	COIL 100UH	1	
L103,04		VLP0110	COIL	2	
L141,42		VLQ0319K101	COIL 100UH	2	
L154		VLQ0163J180	COIL 18UH	1	
L155		VLQ0163J220	COIL 22UH	1	
L174		VLQ0163J180	COIL 18UH	1	
L175		VLQ0163J220	COIL 22UH	1	
L203,04		VLQ0319K101	COIL 100UH	2	
L205,06		VLQ0163J680	COIL 68UH	2	
L208		VLQ0319K220	COIL 22UH	1	
L212		VLQ0319K101	COIL 100UH	1	
L220,21		VLQ0163J560	COIL 56UH	2	
L401		VLQ0163J470	COIL 47UH	1	
L501,02		VLQ0319K101	COIL 100UH	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L509,10		VLQ0319K101	COIL 100UH	2	
L513		VLQ0163J221	COIL 220UH	1	
L601-03		VLP0110	COIL	3	
L606,07		VLQ0319K101	COIL 100UH	2	
L705		VLQ0163J3R3	COIL 3.3UH	1	
L707		VLQ0163J560	COIL 56UH	1	
L910		VLQ0163J330	COIL 33UH	1	
P331		VJP1942T	CONNECTOR (MALE)	1	
P332		VJP1604T	CONNECTOR (MALE) 11P	1	
P334		VJP1932T	CONNECTOR(MALE)	1	
P335		VJP1599T	CONNECTOR (MALE) 6P	1	
Q2,Q3		2SB1218AQR	TRANSISTOR	2	<R>
Q16-18		2SC3930-BC	TRANSISTOR	3	<R>
Q19-21		2SA1532-BC	TRANSISTOR	3	<R>
Q41,42		2SK663-R	TRANSISTOR	2	<R>
Q81		2SC3930-BC	TRANSISTOR	1	<R>
Q82		2SA1532-BC	TRANSISTOR	1	<R>
Q91		2SB1218AQR	TRANSISTOR	1	<R>
Q101		2SA1532-BC	TRANSISTOR	1	<R>
Q141		2SB1218AQR	TRANSISTOR	1	<R>
Q142-44		2SD1819AQR	TRANSISTOR	3	<R>
Q145		2SA1532-BC	TRANSISTOR	1	<R>
Q146		2SB1218AQR	TRANSISTOR	1	<R>
Q165		2SD1819AQR	TRANSISTOR	1	<R>
Q166		2SB1218AQR	TRANSISTOR	1	<R>
Q167		2SD1819AQR	TRANSISTOR	1	<R>
Q168		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q201		2SB1218AQR	TRANSISTOR	1	<R>
Q202,03		2SC3930-BC	TRANSISTOR	2	<R>
Q204		2SB1218AQR	TRANSISTOR	1	<R>
Q205,06		2SC3930-BC	TRANSISTOR	2	<R>
Q207,08		UN5213	TRANSISTOR-RESISTOR	2	<R>
Q230		2SB1218AQR	TRANSISTOR	1	<R>
Q231,32		2SD1819AQR	TRANSISTOR	2	<R>
Q233		2SC3931-CD	TRANSISTOR	1	<R>
Q234		2SB1218AQR	TRANSISTOR	1	<R>
Q235,36		2SD1819AQR	TRANSISTOR	2	<R>
Q237		2SC3931-CD	TRANSISTOR	1	<R>
Q238		2SD1819AQR	TRANSISTOR	1	<R>
Q240		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q241		2SD1819AQR	TRANSISTOR	1	<R>
Q243		2SD1819AQR	TRANSISTOR	1	<R>
Q401		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q501,02		2SB1218AQR	TRANSISTOR	2	<R>
Q503,04		2SC3930-BC	TRANSISTOR	2	<R>
Q506		2SC3930-BC	TRANSISTOR	1	<R>
Q507		2SK663-R	TRANSISTOR	1	<R>
Q509,10		2SB1218AQR	TRANSISTOR	2	<R>
Q511,12		2SC3930-BC	TRANSISTOR	2	<R>
Q514		2SC3930-BC	TRANSISTOR	1	<R>
Q515		2SK663-R	TRANSISTOR	1	<R>
Q523		2SD1819AQR	TRANSISTOR	1	<R>
Q525		2SA1532-BC	TRANSISTOR	1	<R>
Q526		2SB1218AQR	TRANSISTOR	1	<R>
Q527		2SC3930-BC	TRANSISTOR	1	<R>
Q528-30		2SB1218AQR	TRANSISTOR	3	<R>
Q601		2SD1819AQR	TRANSISTOR	1	<R>
Q604-06		2SC3930-BC	TRANSISTOR	3	<R>
Q705		2SC3930-BC	TRANSISTOR	1	<R>
Q707		2SC3938-R	TRANSISTOR	1	<R>
Q708,09		2SA1226	TRANSISTOR	2	<R>
Q710		2SC3938-R	TRANSISTOR	1	<R>
Q711		2SB1218AQR	TRANSISTOR	1	<R>
Q712		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q871		2SB1114	TRANSISTOR	1	<R>
Q872		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q873		2SB1114	TRANSISTOR	1	<R>
Q874		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q881		2SB1114	TRANSISTOR	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q882		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q883		2SB1114	TRANSISTOR	1	<R>
Q884		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q885		2SC3742	TRANSISTOR	1	<R>
Q886		2SB1218AQR	TRANSISTOR	1	<R>
Q887		2SB1114	TRANSISTOR	1	<R>
Q888		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q889		2SB1114	TRANSISTOR	1	<R>
Q890		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q891		2SC3742	TRANSISTOR	1	<R>
Q892		2SB1218AQR	TRANSISTOR	1	<R>
Q893		UN5213	TRANSISTOR-RESISTOR	1	<R>
Q909		2SB1218AQR	TRANSISTOR	1	<R>
Q910,11		2SD1819AQR	TRANSISTOR	2	<R>
			RESISTORS		
R1		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R2		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R3		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R5		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R6		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R7		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R9		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R11		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R16-18		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	3	
R19		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R20		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R21		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R22		ERJ3GEYJ150	M.RESISTOR CH 1/16W 15	1	
R23		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R24		ERJ3GEYJ150	M.RESISTOR CH 1/16W 15	1	
R25		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R26		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R27		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R28		ERJ3GEYJ150	M.RESISTOR CH 1/16W 15	1	
R29		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R30,31		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	2	
R32		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R33		ERJ3GEYJ150	M.RESISTOR CH 1/16W 15	1	
R34		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R35		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R36		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R37		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R38		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R39		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R40		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R41		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R42		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R43		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R44		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R45		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R46		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R47		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R48		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R49		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R50		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R51		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R52		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R53		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R54		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R55		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R56		VRE0034E302	M.RESISTOR CH 1/10W 3K	1	
R57		VRE0034E102	M.RESISTOR CH 1/10W 1K	1	
R58		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R67		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R68		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R69-71		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R72		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R73		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R74		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R75		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R81		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R82		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R83		VRE0034E332	M.RESISTOR CH 1/10W 3.3K	1	
R84		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R85		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R86		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R94		ERDS2TJ182	C.RESISTOR 1/4W 1.8K	1	
R95		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R96		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R97		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R98		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R99		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R102		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R104,05		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R107		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R108		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R110		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R112		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R113		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R114		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R115,16		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	2	
R117		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R118		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R119		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R120		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R123		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R125,26		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R129		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R131		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R134		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R135		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R136		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R140		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R141		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R142		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R143		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R144,45		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R146		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R147		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R148		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R149		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R150		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R151,52		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R153		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R155		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R156		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R157		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R158,59		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R160		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R162		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R165		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R166		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R167,68		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R169		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R170		ERDS2TJ222	C.RESISTOR 1/4W 2.2K	1	
R171		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R172		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R173		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R174		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R175		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R176		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R177		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R178		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R180		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R191,92		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	2	
R193,94		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R201		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R202		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R203		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R204		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R205		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R206		ERJ6GEYK475	M.RESISTOR CH 1/10W 4.7M	1	
R207		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R208		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R209		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R210		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R211		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R212		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R213		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R214		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R215		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R216		ERJ6GEYK475	M.RESISTOR CH 1/10W 4.7M	1	
R217		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R218		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R219		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R220		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R221		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R222		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R223		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R224		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R225		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R226		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R227		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R228		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R229		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R230		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R231		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R232-34		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	3	
R235		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R236,37		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R238,39		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R295,96		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R297		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R298		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R299,00		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	2	
R301		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R302		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R303		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R304		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R305		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R306		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R307		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R308		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R309		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R310,11		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R312		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R315,16		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R317		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R318		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R319		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R320		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R321		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R322		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R323		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R324		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R325		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R326		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R327		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R328		ERJ3GEYJ680	M.RESISTOR CH 1/16W 68	1	
R330		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R331,32		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R333		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R335		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R336		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R337		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R338,39		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R340		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R341		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R342-44		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R345		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R346		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R347		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R348-50		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R351		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R353		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R354		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R356		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R359		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R362		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R363		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R364		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R365		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R366		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R367		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R374		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R401		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R402		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R403		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R404		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R411		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R412		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R414		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R416		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R421		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R422		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R427		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R428		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R430		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R432		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R433		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R434		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R437		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R439-41		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	3	
R442		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R444		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R445		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R451		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R452		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R453		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R454		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R458,59		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	2	
R501		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R502		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R503,04		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	2	
R505		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R506		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R507		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R509,10		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R511		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R512		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R513		VRE006606472	M.RESISTOR CH 1/10W 4.7K	1	
R514		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R515		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R516		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R518		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R519		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R520		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R521		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R522		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R523		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R524		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R525		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R526		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R527		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R528,29		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	2	
R530		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R531		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R532		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R533		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R534		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R535		VRE006606472	M.RESISTOR CH 1/10W 4.7K	1	
R536		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R537,38		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R540		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R541		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R542		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R543		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R544		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R545		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R546		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R547		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R549		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R559		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R560		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R561		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R568		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R569		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R570		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R571		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R572		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R573		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R574		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R575		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R576		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R577		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R578		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R579		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R580		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R581-83		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	3	
R584		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R585,86		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	2	
R587,88		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	2	
R589		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R590		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R591		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	1	
R593,94		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	2	
R595		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R596		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R597		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R598		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R601,02		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R603		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R614		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R615		VRE0034E223	M.RESISTOR CH 1/10W 22K	1	
R621		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R622		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R623		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R631		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R632		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R633		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R634		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R635,36		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R638		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R639		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R647,48		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	2	
R656		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R658		VRE0034E302	M.RESISTOR CH 1/10W 3K	1	
R659		VRE0034E123	M.RESISTOR CH 1/10W 12K	1	
R701		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R702		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R703		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R704		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R705		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R706,07		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	2	
R708		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R710		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R712		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R713		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R716		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R717		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R719		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R721		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R722		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R724		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R730		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R731		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R732		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R738		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R741		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R742		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R751		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R752		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R753		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R754-56		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	3	
R761		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R762		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R763,64		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	2	
R765		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R766		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R770,71		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R781		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R782		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R783,84		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	2	
R872		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R873		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R874		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R875		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R880,81		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R882		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R883		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R884		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R885		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R886		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R887		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R888		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R889		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R890		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R891		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R892		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R893		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R894-97		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	4	
R898		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R899		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R901		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R902		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R921		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R926		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R927		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	1	
R932		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R934		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R936		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R938		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R940		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R942-44		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	3	
R945		ERJ3GEYJ152	M.RESISTOR 1/16W 1.5K	1	
R946-48		ERJ3GEYJ102	M.RESISTOR 1/16W 1K	3	
R950		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R951		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R952		ERJ3GEYJ332	M.RESISTOR 1/16W 3.3K	1	
R980-82		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	3	
R985		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R997		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R999		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
SW401		VSS0283	SWITCH	1	<R>
SW701		VSS0189	SWITCH	1	<R>
VC35		VCV0042	TRIMMER	1	
VC141		VCV0042	TRIMMER	1	
VC401		VCV0042	TRIMMER	1	
VL701		VLQ0415	COIL	1	
VR41		VRV0064B103	V.RESISTOR 10K	1	
VR81		EVM7JSX30B13	V.RESISTOR 1K	1	
VR141		EVM7JSX30B53	V.RESISTOR 5K	1	
VR142		EVM7JSX30B13	V.RESISTOR 1K	1	
VR165		EVM7JSX30B23	V.RESISTOR 2K	1	
VR212-15		EVM7JSX30B13	V.RESISTOR 1K	4	
VR216,17		VRV0064B103	V.RESISTOR 10K	2	
VR218		VRV0064B502	V.RESISTOR 5K	1	
VR401		EVM7JSX30B13	V.RESISTOR 1K	1	
VR403		EVM7JSX30B14	V.RESISTOR 10K	1	
VR501,02		EVM7JSX30B23	V.RESISTOR 2K	2	
VR505		VRV0064B102	V.RESISTOR 1K	1	
VR506		EVM7JSX30B23	V.RESISTOR 2K	1	
VR601,02		VRV0064B203	V.RESISTOR 20K	2	
VR604		EVM7JSX30B13	V.RESISTOR 1K	1	
VR701		VRV0064B202	V.RESISTOR 2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
VR702		EVM7JSX30B53	V.RESISTOR 5K	1	
VR906		EVM7JSX30B13	V.RESISTOR 1K	1	
VR907		VRV0109B102	V.RESISTOR 1K	1	
X201		VSX0270	CRYSTAL OSCILLATOR	1	<R>
	■	VEP81065A	P.C.BOARD W/COMPONENT		
			POWER		
			CAPACITORS		
C1		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C2		ECEA1HKS4R7	E.CAPACITOR 50V 4.7U	1	
C3		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C4		ECEA1HKS4R7	E.CAPACITOR 50V 4.7U	1	
C5		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C6		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C7		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C8		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C9		ECA1EFQ182	E.CAPACITOR 25V 1800U	1	
C10		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C11		ECQB1H103JF	P.CAPACITOR 50V 0.01U	1	
C12,13		ECUM1H391JCN	C.CAPACITOR CH 50V 390P	2	
C14		ECA0JFQ151	E.CAPACITOR 6.3V 150U	1	
C15		ECA0JFQ102	E.CAPACITOR 6.3V 1000U	1	
C16		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C17		ECUM1H391JCN	C.CAPACITOR CH 50V 390P	1	
C18		ECA1AFQ101	E.CAPACITOR 10V 100U	1	
C19		ECA1EFQ102	E.CAPACITOR 25V 1000U	1	
C20		ECEA1HKS4R7	E.CAPACITOR 50V 4.7U	1	
C21		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C22		ECEA1HKS4R7	E.CAPACITOR 50V 4.7U	1	
C23		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C24		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C25		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C26		VCC0037F432	C.CAPACITOR 432P	1	
C27		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C28		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C29		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C30		ECUM1H391JCN	C.CAPACITOR CH 50V 390P	1	
C31		ECA0JFQ151	E.CAPACITOR 6.3V 150U	1	
C32		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C33		ECUM1H391JCN	C.CAPACITOR CH 50V 390P	1	
C34		ECA0JFQ151	E.CAPACITOR 6.3V 150U	1	
C35		ECA0JFQ102	E.CAPACITOR 6.3V 1000U	1	
C36		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C37		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C38		ECEA1HKS2R2	E.CAPACITOR 50V 2.2U	1	
C39		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C40		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C42		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C43		ECUM1H821JCN	C.CAPACITOR CH 50V 820P	1	
C44,45		ECA1JFQ220	E.CAPACITOR 63V 22U	2	
C46		ECUM1H821JCN	C.CAPACITOR CH 50V 820P	1	
C47,48		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C49		ECA1AFQ222	E.CAPACITOR 10V 2200U	1	
C50-54		ECA1EFQ390	E.CAPACITOR 25V 39U	5	
C55		ECA1AFQ331	E.CAPACITOR 10V 330U	1	
C56		ECA0JFQ102	E.CAPACITOR 6.3V 1000U	1	
C57		ECUM1H331KBN	C.CAPACITOR CH 50V 330P	1	
D1,D2		MA151K	DIODE	2	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D5,D6		21DQ04	DIODE	2	<R>
D7		11DQ04	DIODE	1	<R>
D8		S3V40	DIODE	1	<R>
D9		MA151K	DIODE	1	<R>
D10		11DQ04	DIODE	1	<R>
D11,12		21DQ04	DIODE	2	<R>
D13,14		MA151K	DIODE	2	<R>
D15		E10QS10	DIODE	1	<R>
IC1		NJM2903M	IC	1	<R>
IC2-C4		TL1451CNS	IC	3	<R>
L1		VLQ0215	COIL	1	
L2		VLQ0216	COIL	1	
L3		VLQ0214	COIL 50UH	1	
L4		ELC10B006	COIL 150UH	1	
L5		VLQ0214	COIL 50UH	1	
L6		VLQ0129	COIL 300UH	1	
L7		ELC08G003	COIL	1	
L8		VLQ0216	COIL	1	
L9		VLQ0335	COIL	1	
L11		ELC08C007	COIL	1	
L13		ELC08G003	COIL	1	
L14		VLQ0354	COIL	1	
P100		VJP2824A004	CONNECTOR (MALE)	1	
P101		VJP2824A003	CONNECTOR (MALE)	1	
P102		VJP2824A002	CONNECTOR (MALE)	1	
P103		VJP2824A004	CONNECTOR (MALE)	1	
P104		VJP2824A002	CONNECTOR (MALE)	1	
P106		VJP1602T	CONNECTOR (MALE) 9P	1	
P107		VJP1942T	CONNECTOR (MALE)	1	
P108		VJP1598T	CONNECTOR (MALE) 5P	1	
P110		VJP1923T	CONNECTOR	1	
P111		VJP1942T	CONNECTOR (MALE)	1	
P116		VJP2824A002	CONNECTOR (MALE)	1	
Q1,Q2		UN2113	TRANSISTOR-RESISTOR	2	<R>
Q3,Q4		2SB709-R	TRANSISTOR CHIP	2	(R)<R>
Q5,Q6		2SK1214	TRANSISTOR	2	<R>
Q7		2SB945-QR	TRANSISTOR	1	<R>
Q8		2SB710-R	TRANSISTOR CHIP	1	(R)<R>
Q9		2SB951-QR	TRANSISTOR	1	<R>
Q10		2SB709-R	TRANSISTOR CHIP	1	(R)<R>
Q11,12		2SD601-R	TRANSISTOR CHIP	2	(R)<R>
Q13		UN2113	TRANSISTOR-RESISTOR	1	<R>
Q14		2SB945-QR	TRANSISTOR	1	<R>
Q15		2SB710-R	TRANSISTOR CHIP	1	(R)<R>
Q16		2SB948A-QR	TRANSISTOR	1	<R>
Q17		2SB710-R	TRANSISTOR CHIP	1	(R)<R>
Q18		UN2113	TRANSISTOR-RESISTOR	1	<R>
Q19,20		2SB709-R	TRANSISTOR CHIP	2	(R)<R>
Q21		2SK1060	TRANSISTOR	1	<R>
			RESISTORS		
R1,R2		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R3		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R5		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R6,R7		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	2	
R8		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R9		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R10,11		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	2	
R12		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R13		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R14		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R15		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R16		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R17		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R18		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R19,20		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R21,22		ERJ6GEYJ220	M.RESISTOR CH 1/10W 22	2	
R23		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R24		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R25		ERJ6GEYJ390	M.RESISTOR CH 1/10W 39	1	
R26		ERG1SJ101	M.RESISTOR 1W 100	1	
R27		ERJ6GEYJ220	M.RESISTOR CH 1/10W 22	1	
R28		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R29		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R30		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R31-33		ERJ8GCYJ102	M.RESISTOR CH 1/8W 1K	3	
R34,35		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R36		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R37		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R38		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R39		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R40		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R41,42		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	2	
R43		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R44		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R45		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R46		VRE0034E333	M.RESISTOR CH 1/10W 33K	1	
R47		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R48		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R49		ERJ6GEYJ390	M.RESISTOR CH 1/10W 39	1	
R50		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R51		ERG12SJ101	M.RESISTOR 1/2W 100	1	
R52		ERJ6GEYJ220	M.RESISTOR CH 1/10W 22	1	
R53		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R54		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R55		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R56		ERJ6GEYJ390	M.RESISTOR CH 1/10W 39	1	
R57		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R58		ERG1SJ470	M.RESISTOR 1W 47	1	
R59		ERJ6GEYJ220	M.RESISTOR CH 1/10W 22	1	
R60		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R61		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R62		VRE0034E152	M.RESISTOR CH 1/10W 1.5K	1	
R63		VRE0034E563	M.RESISTOR CH 1/10W 56K	1	
R64		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R65		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R66		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R67		VRE0034E113	M.RESISTOR CH 1/10W 11K	1	
R68		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R69		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R70		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R71		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R72		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R73		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R74		ERJ6GEYJ220	M.RESISTOR CH 1/10W 22	1	
R75		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R80		ERG12SJ100	M.RESISTOR 1/2W 10	1	
T1		VLT0291	TRANSFORMER	1	
VR1-R4		EVMF6SA00B53	V.RESISTOR	4	
			MISCELLANEOUS		
		VSC3756	HEAT SINK	1	
		XYN3+F8S	SCREW	6	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP86115B	P.C.BOARD W/COMPONENT		
			FRONT		
B1		VSB0140	BATTERY	1	
			CAPACITORS		
C2-C9		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	8	
C10		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C11		ECEA0JKS330	E.CAPACITOR 6.3V 33U	1	
C12		ECUM1H020CCN	C.CAPACITOR CH 50V 2P	1	
C13		ECUM1H390JCN	C.CAPACITOR CH 50V 39P	1	
C14-16		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	3	
C17		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C18		ECEA1HKS010	E.CAPACITOR 50V 1U	1	
C19		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C20-24		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	5	
D1-D9		BR3668S	DIODE	9	<R>
D10-15		BR3668S	DIODE	6	<R>
D16		MA151K	DIODE	1	<R>
D17		MA151WK	DIODE	1	<R>
D18		MA151K	DIODE	1	<R>
D19		MA151WK	DIODE	1	<R>
D20		MA151K	DIODE	1	<R>
D21		MA151WK	DIODE	1	<R>
D22		MA151K	DIODE	1	<R>
D23		MA723	DIODE	1	<R>
D24		MA3030	DIODE	1	<R>
D25		MA151K	DIODE	1	<R>
D26		LN0315CP4	DIODE	1	<R>
D27		MA151WK	DIODE	1	<R>
IC2		UPD7503GFJ35	IC	1	<R>
LCD1		EDD053K56A4P	LCD	1	
P450		VJS3423B030	CONNECTOR (FEMALE)	1	
P451		VJS3423B014	CONNECTOR (FEMALE)	1	
P452		VJP1612T	CONNECTOR(MALE)	1	
Q1-Q9		UN2113	TRANSISTOR-RESISTOR	9	<R>
Q10-15		UN2113	TRANSISTOR-RESISTOR	6	<R>
Q16		2SB710A-R	TRANSISTOR	1	(Q,R)<R>
Q17		2SD601A-R	TRANSISTOR CHIP	1	(Q,R)<R>
Q18		2SB709A-R	TRANSISTOR CHIP	1	(Q,R)<R>
Q19		2SD601A-R	TRANSISTOR CHIP	1	(Q,R)<R>
			RESISTORS		
R9		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R10-16		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	7	
R17,18		ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	2	
R19-31		ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	13	
R32-34		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	3	
R35		ERJ6GEYJ823	M.RESISTOR CH 1/10W 82K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R36		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R37		ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
R38		ERJ6GEYJ823	M.RESISTOR CH 1/10W 82K	1	
R39		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R40		ERJ6GEYJ132	M.RESISTOR CH 1/10W 1.3K	1	
R41		ERJ6GEYJ431	M.RESISTOR CH 1/10W 430	1	
R42		ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R43-45		ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	3	
R46		ERJ6GEYJ334	M.RESISTOR CH 1/10W 330K	1	
R47		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R48		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R49		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R50		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R51,52		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R53,54		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	2	
R55		ERJ6GEYJ154	M.RESISTOR CH 1/10W 150K	1	
R56,57		ERDS2TJ681	C.RESISTOR 1/4W 680	2	
R58-63		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	6	
R64		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R65		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
SW1-W9		EVQQS205K	SWITCH	9	<R>
SW10,11		VSS0143	SWITCH	2	<R>
SW12		VSS0126	SWITCH	1	<R>
SW14		VSS0126	SWITCH	1	<R>
SW15		VSS0143	SWITCH	1	<R>
SW16		VSS0126	SWITCH	1	<R>
SW17-20		EVQQS205K	SWITCH	4	<R>
SW21		VSS0143	SWITCH	1	<R>
SW22		VSS0312	SWITCH	1	<R>
SW23		EVQQS205K	SWITCH	1	<R>
VC1		VCV0040	TRIMMER	1	
X1		VSX0094	CRYSTAL OSCILLATOR	1	<R>
			MISCELLANEOUS		
		VGQ1200	LED HOLDER	1	
		VGQ1882	RUBBER PLATE	1	
		VMS4992	SPACER	3	
		VMX1223	LED SPACER	15	
		XYNV3+K6FR	SCREW	3	
	■	VEP84148A	P.C.BOARD W/COMPONENT		
			AUDIO MONITOR		
			CAPACITORS		
C2001		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C2002		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C2004		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C2006		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C2007		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C2008		ECEV1EN4R7S	E.CAPACITOR 25V 4.7U	1	
C2009		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C2010		ECUM1H122KBN	C.CAPACITOR CH 50V 1200P	1	
C2011		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C2012		ECUM1H122KBN	C.CAPACITOR CH 50V 1200P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C2013		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
D2001,02		MA153A	DIODE	2	<R>
D2003		MA151K	DIODE	1	<R>
IC2002		MC14001BF	IC	1	<R>
IC2003,04		NJM4558M	IC	2	<R>
IC2005		NJM4556MB	IC	1	<R>
P231		VJP1603T	CONNECTOR (MALE) 10P	1	
P234		VJP1596T	CONNECTOR (MALE) 3P	1	
P235		VJP1604T	CONNECTOR (MALE) 11P	1	
P236		VJP1598T	CONNECTOR (MALE) 5P	1	
Q2001-03		2SD1328-R	TRANSISTOR CHIP	3	(Q,R)<R>
			RESISTORS		
R2001,02		ERJ6GEYJ390	M.RESISTOR CH 1/10W 39	2	
R2003		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R2006		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R2007		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R2008		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R2009		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R2010		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R2011		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R2012		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R2013		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R2014		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R2016		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R2017		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R2018		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R2019,20		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	2	
R2021		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R2022,23		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R2024-27		ERJ6GEYJ150	M.RESISTOR CH 1/10W 15	4	
R2028		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R2029,30		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R2031-34		ERJ6GEYJ150	M.RESISTOR CH 1/10W 15	4	
R2035		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R2037,38		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	2	
R2039		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R2040		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
SW2001		VSS0228	SWITCH	1	<R>
SW2002		VSS0162	SWITCH	1	<R>
VR5001		EVUNCA047A14	V.RESISTOR 10K	1	
	■	VEP83164B	P.C.BOARD W/COMPONENT		
			JACK		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITORS		
C1		ECUM1C104ZFN	C.CAPACITOR CH 16V 0.1U	1	
C2		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C3		ECUM1C104ZFN	C.CAPACITOR CH 16V 0.1U	1	
C4		ECEV0JV470S	E.CAPACITOR 6.3V 47U	1	
C8		ECUM1C104ZFN	C.CAPACITOR CH 16V 0.1U	1	
C9		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C10		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C11		ECEV1HV010S	E.CAPACITOR 50V 1U	1	
C12-15		ECEV0JN470S	E.CAPACITOR 6.3V 47U	4	
C16,17		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	2	
C18		ECEV1CN100S	E.CAPACITOR 16V 10U	1	
C19,20		ECUM1C104ZFN	C.CAPACITOR CH 16V 0.1U	2	
D1		MA153	DIODE	1	<R>
D2		MA151K	DIODE	1	<R>
D3		MA153	DIODE	1	<R>
D4		MA151K	DIODE	1	<R>
D5		MA153	DIODE	1	<R>
IC1		MC74HC02AF	IC	1	<R>
IC2		NJM4558M	IC	1	<R>
L1,L2		VLQ0163J220	COIL 22UH	2	
L5,L6		VLQ0163J220	COIL 22UH	2	
P901		VJP1601T	CONNECTOR (MALE) 8P	1	
P903		VJP1600T	CONNECTOR (MALE) 7P	1	
P904		VJP1595T	CONNECTOR (MALE) 2P	1	
P905		VJP1603T	CONNECTOR (MALE) 10P	1	
P906		VJP1604T	CONNECTOR (MALE) 11P	1	
P907		VJP1600T	CONNECTOR (MALE) 7P	1	
P908		VJP1602T	CONNECTOR (MALE) 9P	1	
P909		VJP1598T	CONNECTOR (MALE) 5P	1	
P910		VJP1603T	CONNECTOR (MALE) 10P	1	
P911		VJP1923T	CONNECTOR	1	
P912		VJP1603T	CONNECTOR (MALE) 10P	1	
P913		VJP1597T	CONNECTOR (MALE) 4P	1	
P915		VJP1597T	CONNECTOR (MALE) 4P	1	
P921,22		VJP1596T	CONNECTOR (MALE) 3P	2	
Q1-Q4		2SD601A-R	TRANSISTOR CHIP	4	(Q,R)<R>
Q5		UN2212	TRANSISTOR-RESISTOR	1	<R>
Q6		UN2213	TRANSISTOR-RESISTOR	1	<R>
			RESISTORS		
R1-R6		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	6	
R8		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R9		VRE0034E151	M.RESISTOR CH 1/10W 150	1	
R10		VRE0034E64X	M.RESISTOR CH 1/10W	1	
R11		VRE0034E03A	RESISTOR	1	
R12		VRE0034E151	M.RESISTOR CH 1/10W 150	1	
R13		VRE0034E64X	M.RESISTOR CH 1/10W	1	
R14		VRE0034E03A	RESISTOR	1	
R15		VRE0034E750	M.RESISTOR CH 1/10W 75	1	
R16		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R17		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R18		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R19		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R20		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R21		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R22,23		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R24		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R25,26		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R27		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R28,29		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R30,31		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R32		ERJ6GEYJ123	M.RESISTOR CH 1/10W 12K	1	
R33		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R34		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R35		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R36		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R37		VRE0034E750	M.RESISTOR CH 1/10W 75	1	
R38,39		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	2	
SW1		VSR0066	SWITCH	1	<R>
SW3		VSS0157	SWITCH	1	<R>
SW4		VSS0228	SWITCH	1	<R>
VR1-R3		VRV0111B203	V.RESISTOR 20K	3	
VR904		EVUL7A011B54	V.RESISTOR 50K	1	
VR905		EVUL7A011B14	V.RESISTOR 10K	1	
	■	VEP84146A	P.C.BOARD W/COMPONENT		
			HEAD PHONE		
			CAPACITORS		
C3001,02		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	2	
			MISCELLANEOUS		
		VJJ0159	HEAD PHONE JACK	1	
	■	VEP84147B	P.C.BOARD W/COMPONENT		
			AUDIO I/O		
			CAPACITORS		
C1001,02		ECEV0JV470S	E.CAPACITOR 6.3V 47U	2	
C1003,04		ECEV0JV101S	E.CAPACITOR 6.3V 100U	2	
C1005		ECEV1HV100S	E.CAPACITOR 50V 10U	1	
C1006-09		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	4	
C1011,12		ECEV0JV470S	E.CAPACITOR 6.3V 47U	2	
C1014		ECEV1CV470S	E.CAPACITOR 16V 47U	1	
C1015		ECEA0JU102	E.CAPACITOR 6.3V 1000U	1	
C1016,17		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	2	
C1020		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	1	
C1021		ECEV1EV6R8S	E.CAPACITOR 25V 6.8U	1	
C1022		ECEV1EV330S	E.CAPACITOR 25V 33U	1	
C1023		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1101,02		ECUM1H471KBN	C.CAPACITOR CH 50V 470P	2	
C1103,04		ECEV1HV3R3S	E.CAPACITOR 50V 3.3U	2	
C1105,06		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	2	
C1107		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C1108		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C1201,02		ECUM1H471KBN	C.CAPACITOR CH 50V 470P	2	
C1203,04		ECEV1HV3R3S	E.CAPACITOR 50V 3.3U	2	
C1205,06		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	2	
C1207		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C1208		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C1301,02		ECUM1H471KBN	C.CAPACITOR CH 50V 470P	2	
C1303,04		ECEV1EN3R3S	E.CAPACITOR 25V 3.3U	2	
C1305,06		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	2	
C1307		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C1308		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C1401,02		ECUM1H471KBN	C.CAPACITOR CH 50V 470P	2	
C1403,04		ECEV1EN3R3S	E.CAPACITOR 25V 3.3U	2	
C1405,06		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	2	
C1407		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C1408		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C1501		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C1502,03		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	2	
C1504,05		ECEV1CV470S	E.CAPACITOR 16V 47U	2	
C1601		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
C1602,03		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	2	
C1604,05		ECEV1CV470S	E.CAPACITOR 16V 47U	2	
C1701,02		ECUM1H471KBN	C.CAPACITOR CH 50V 470P	2	
C1703,04		ECEV1EN3R3S	E.CAPACITOR 25V 3.3U	2	
C1705,06		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	2	
C1707		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C1708		ECEV0JN100S	E.CAPACITOR 6.3V 10U	1	
D1011		MA151K	DIODE	1	<R>
D1021		MA153	DIODE	1	<R>
D1101,02		MA153	DIODE	2	<R>
D1201,02		MA153	DIODE	2	<R>
D1301,02		MA153	DIODE	2	<R>
D1401,02		MA153	DIODE	2	<R>
D1701,02		MA153	DIODE	2	<R>
IC1001		NJM4580ED	IC	1	<R>
IC1002		NJM4558M	IC	1	<R>
IC1003		NJM4580ED	IC	1	<R>
IC1004		NJM4558M	IC	1	<R>
IC1005,06		NJM4580ED	IC	2	<R>
IC1007		NJM4558M	IC	1	<R>
IC1008		NJM4580ED	IC	1	<R>
IC1009		MC14053BF	IC	1	(R)<R>
IC1010		NJM3415M	IC	1	<R>
IC1011-14		NE5534D	IC	4	<R>
L1001-04		VLQ0319K470	COIL 47UH	4	
L1101,02		VLQ0163J100	COIL 10UH	2	
L1201,02		VLQ0163J100	COIL 10UH	2	
L1301,02		VLQ0163J100	COIL 10UH	2	
L1401,02		VLQ0163J100	COIL 10UH	2	
L1701,02		VLQ0163J100	COIL 10UH	2	
P221		VJP1596T	CONNECTOR (MALE) 3P	1	
P222		VJP1603T	CONNECTOR (MALE) 10P	1	
P223		VJP1604T	CONNECTOR (MALE) 11P	1	
P224		VJP1600T	CONNECTOR (MALE) 7P	1	
P225-30		VJP1596T	CONNECTOR (MALE) 3P	6	
Q1001		2SD601-R	TRANSISTOR CHIP	1	(Q,R)<R>
Q1002		2SB709-R	TRANSISTOR CHIP	1	(Q,R)<R>
Q1021		2SB709-R	TRANSISTOR CHIP	1	(Q,R)<R>
Q1501,02		2SD1328-R	TRANSISTOR CHIP	2	(Q,R)<R>
Q1601,02		2SD1328-R	TRANSISTOR CHIP	2	(Q,R)<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			RESISTORS		
R1001,02		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	2	
R1011		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R1021,22		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R1023		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R1101,02		VRE0034E682	M.RESISTOR CH 1/10W 6.8K	2	
R1105		VRE0034E471	M.RESISTOR CH 1/10W 470	1	
R1106		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R1107-14		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	8	
R1115,16		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R1117		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R1118		VRE0034E123	M.RESISTOR CH 1/10W 12K	1	
R1119		VRE0034E561	M.RESISTOR CH 1/10W 560	1	
R1120		VRE0034E181	M.RESISTOR CH 1/10W 180	1	
R1121-25		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	5	
R1126		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1127		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R1201,02		VRE0034E682	M.RESISTOR CH 1/10W 6.8K	2	
R1205		VRE0034E471	M.RESISTOR CH 1/10W 470	1	
R1206		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R1207-14		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	8	
R1215,16		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R1217		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R1218		VRE0034E123	M.RESISTOR CH 1/10W 12K	1	
R1219		VRE0034E561	M.RESISTOR CH 1/10W 560	1	
R1220		VRE0034E181	M.RESISTOR CH 1/10W 180	1	
R1221-25		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	5	
R1226		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1227		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R1301,02		VRE0034E682	M.RESISTOR CH 1/10W 6.8K	2	
R1303		VRE0034E471	M.RESISTOR CH 1/10W 470	1	
R1304		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R1305,06		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R1307		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R1308		VRE0034E123	M.RESISTOR CH 1/10W 12K	1	
R1309		VRE0034E561	M.RESISTOR CH 1/10W 560	1	
R1310		VRE0034E181	M.RESISTOR CH 1/10W 180	1	
R1311-15		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	5	
R1316		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1401,02		VRE0034E682	M.RESISTOR CH 1/10W 6.8K	2	
R1403		VRE0034E471	M.RESISTOR CH 1/10W 470	1	
R1404		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R1405,06		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R1407		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R1408		VRE0034E123	M.RESISTOR CH 1/10W 12K	1	
R1409		VRE0034E561	M.RESISTOR CH 1/10W 560	1	
R1410		VRE0034E181	M.RESISTOR CH 1/10W 180	1	
R1411-15		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	5	
R1416		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R1501		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R1502		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R1503		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R1504		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R1505		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R1506-08		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	3	
R1509,10		VRE0034E822	M.RESISTOR CH 1/10W 8.2K	2	
R1511,12		ERJ6GEYJ470	M.RESISTOR CH 1/10W 47	2	
R1513		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R1514,15		VRE0034E822	M.RESISTOR CH 1/10W 8.2K	2	
R1516-19		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	4	
R1521		VRE0034E393	M.RESISTOR CH 1/10W 39K	1	
R1522		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R1601		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R1602		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R1603		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R1604		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R1605		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R1606-08		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	3	
R1609,10		VRE0034E822	M.RESISTOR CH 1/10W 8.2K	2	
R1611,12		ERJ6GEYJ470	M.RESISTOR CH 1/10W 47	2	
R1613		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
R1614,15		VRE0034E822	M.RESISTOR CH 1/10W 8.2K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1616-19		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	4	
R1621		VRE0034E393	M.RESISTOR CH 1/10W 39K	1	
R1622		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R1701		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R1702,03		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	2	
R1704		VRE0034E181	M.RESISTOR CH 1/10W 180	1	
R1705-10		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	6	
R1711		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
SW1001-04		VSS0157	SWITCH	4	<R>
SW1005-08		VSS0186	SWITCH	4	<R>
SW1009		VSS0196	SWITCH	1	<R>
SW1010,11		VSS0186	SWITCH	2	<R>
SW1012		VSS0228	SWITCH	1	<R>
	■	VEP80734A	P.C.BOARD W/COMPONENT		
			VOLUME		
			CAPACITORS		
C2001,02		ECST1AY475Z	T.CAPACITOR 10V 4.7U	2	
IC2001,02		NJM4580ED	IC	2	<R>
P481		VJP1599T	CONNECTOR (MALE) 6P	1	
P482		VJP1601T	CONNECTOR (MALE) 8P	1	
			RESISTORS		
R2001,02		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	2	
R2011		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R2012		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R2013		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R2021		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R2022		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R2023		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R2031		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R2032		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R2033		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R2041		ERJ6GEYJ333	M.RESISTOR CH 1/10W 33K	1	
R2042		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R2043		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
VR2001-04		EVULNA021A14	V.RESISTOR 10K	4	
	■	VEP80737A	P.C.BOARD W/COMPONENT		
			METER		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITORS		
C1001-03		ECUM1E104KBN	C.CAPACITOR 25V 0.1U	3	
D1001-04		LN0214CP4	LED	4	<R>
D1005		MA3068M	DIODE	1	<R>
D1006		MA151K	DIODE	1	<R>
IC1001,02		MC14053BF	IC	2	(R)<R>
P462		VJP1595T	CONNECTOR (MALE) 2P	1	
P463		VJP1599T	CONNECTOR (MALE) 6P	1	
P465,66		VJP1595T	CONNECTOR (MALE) 2P	2	
P468		VJP1595T	CONNECTOR (MALE) 2P	1	
P470		VJP1595T	CONNECTOR (MALE) 2P	1	
			RESISTORS		
R1001		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R1002		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R1003-10		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	8	
R1011		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R1012		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R1013		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
VR1001		EVN32CA00B54	V.RESISTOR 50K	1	
	■	VEP80738A	P.C.BOARD W/COMPONENT		
			METER SELECT		
P471		VJP1597T	CONNECTOR (MALE) 4P	1	
SW3001-03		VSS0186	SWITCH	3	<R>
	■	VEP89005A	P.C.BOARD W/COMPONENT		
			MECHA I/F (2)		
			MISCELLANEOUS		
		VJP1229T	CONNECTOR	2	
		VJP1230T	CONNECTOR	1	
		VJP1231T	CONNECTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP89004A	P.C.BOARD W/COMPONENT		
			MECHA I/F (1)		
			MISCELLANEOUS		
		VJP1229T	CONNECTOR	1	
		VJP1230T	CONNECTOR	1	
		VJP1236T	CONNECTOR	1	
		VJP3078	CONNECTOR	1	
		VJP3125B015	CONNECTOR	1	
		VJS3423B015	CONNECTOR	1	

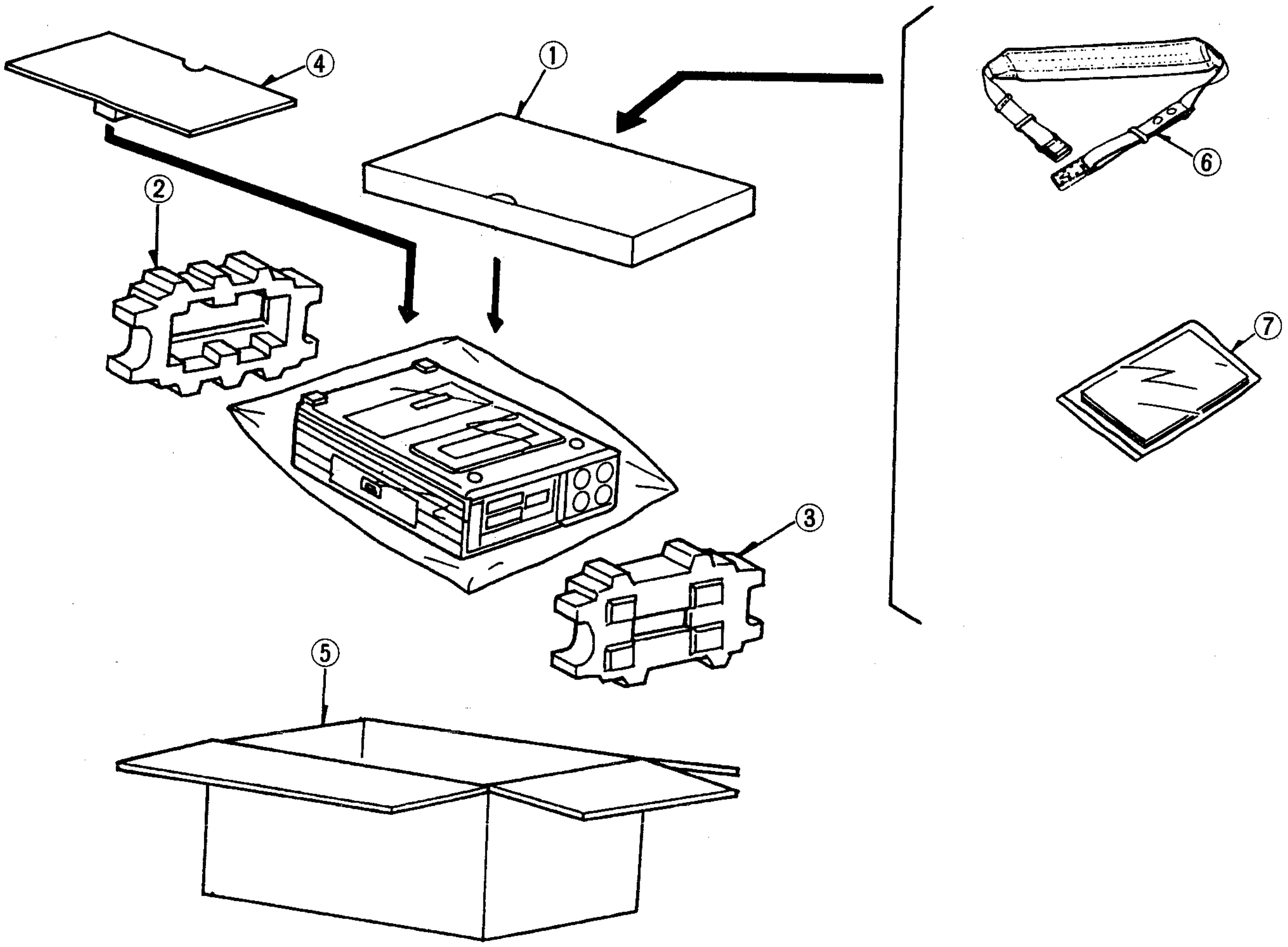
2. MECHANICAL REPLACEMENT PARTS LIST & EXPLODED VIEWS

1. PACKING PARTS

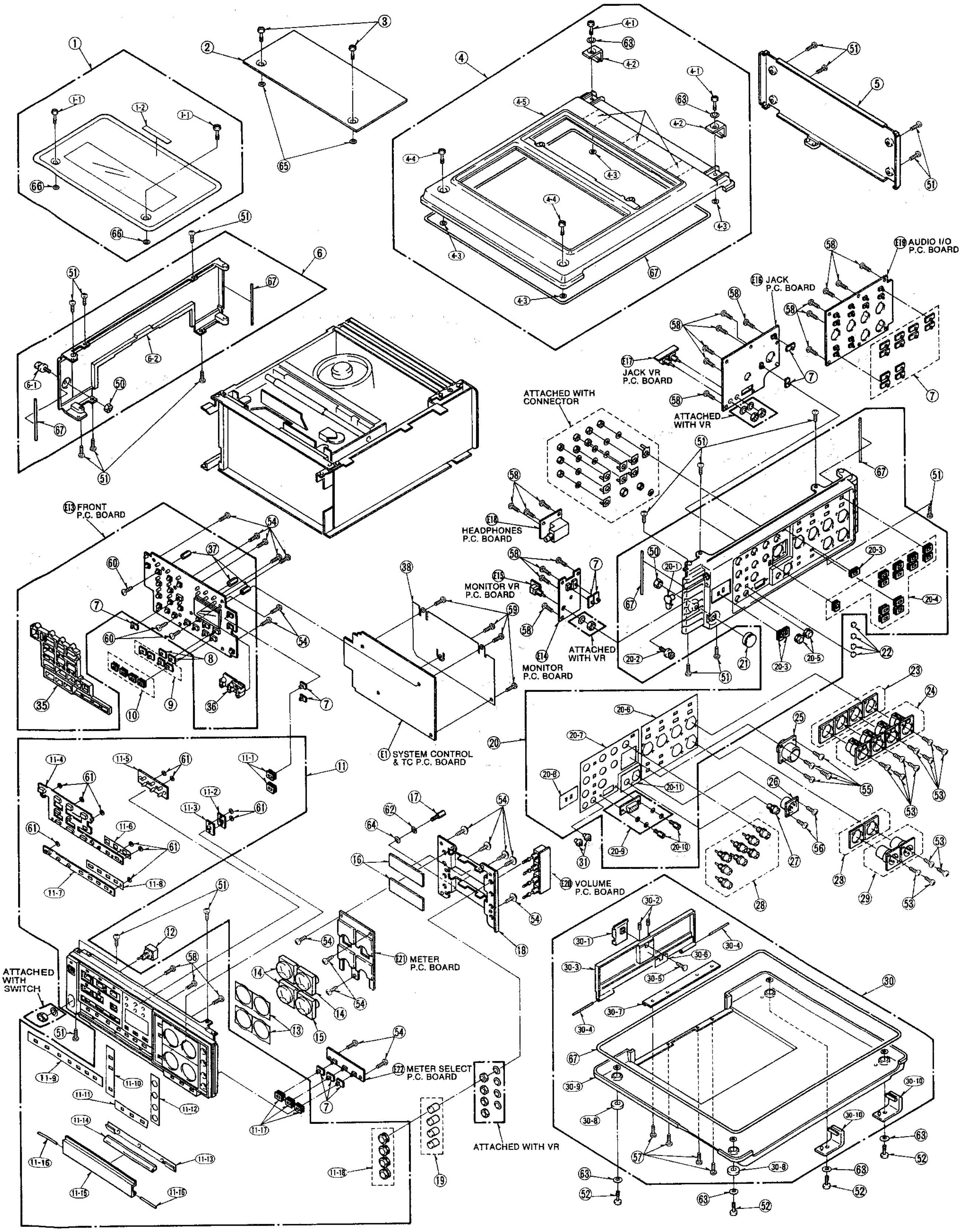
Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1		VPG3202	ACCESSARY CASE	1	
2		VPN1761	CUSHION (BACK)	1	
3		VPN1760	CUSHION (FRONT)	1	
4		VPN1799	CUSHION (TOP)	1	
5		VPG3201	PACKING CASE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
6		VFC0379	SHOULDER STRAP	1	
7		VQT5184	OPERATING INSTRUCTIONS	1	
			(ENGLISH)		
		VQT5185	OPERATING INSTRUCTIONS	1	
			(GERMAN)		

1. Packing Parts



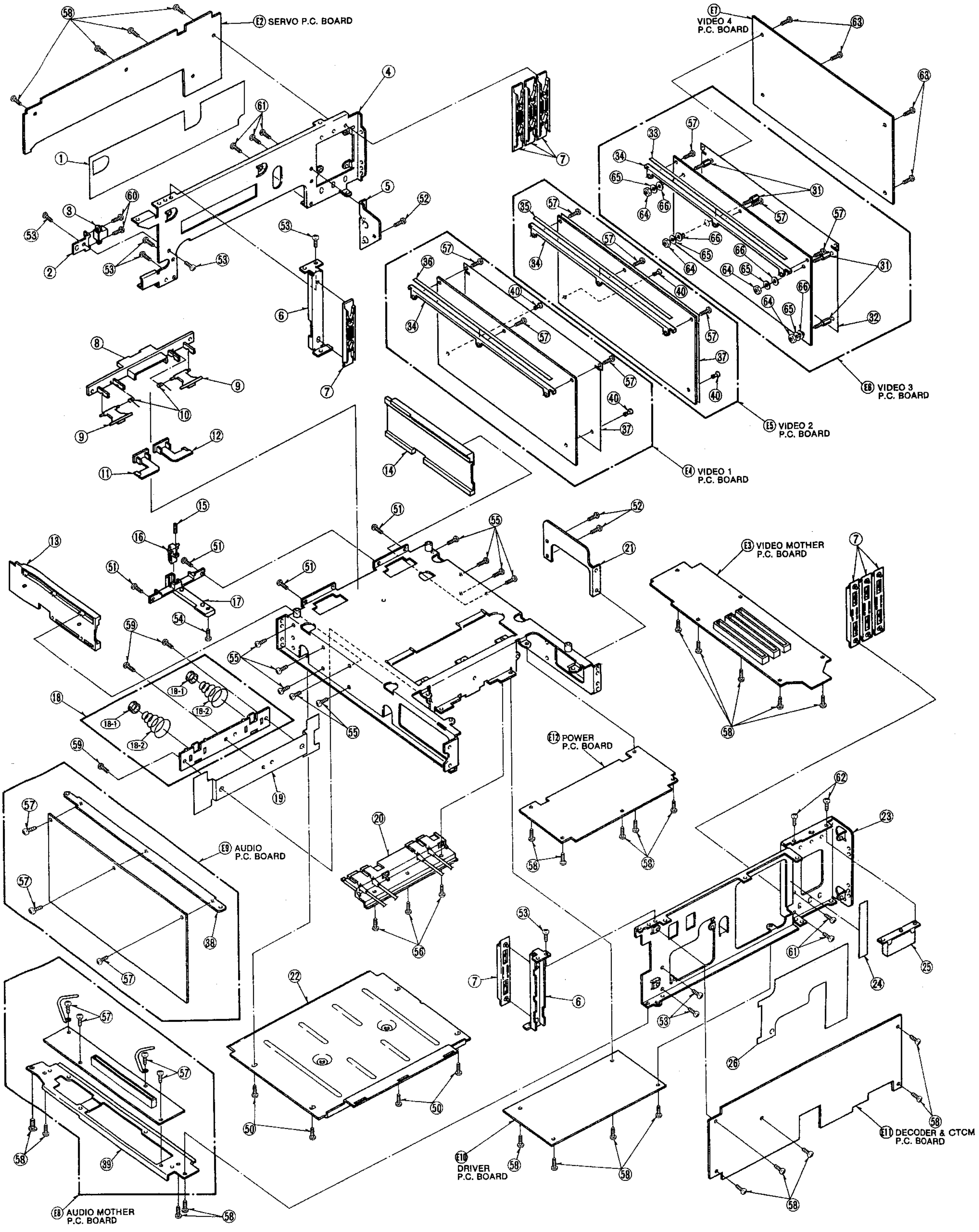
2. Frame & Casing Parts (1)


①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳
㉑
㉒
㉓
㉔
㉕
㉖
㉗
㉘
㉙
㉚
㉛
㉟
㊱
㊲
㊳
㊿
(51)
(52)
(53)
(54)
(55)
(56)
(57)
(58)
(59)
(60)
(61)
(62)
(63)
(64)
(65)
(66)
(67)
1-1
1-2
4-1
4-2
4-3
4-4
4-5
6-1
6-2
11-1
11-2
11-3
11-4
11-5
11-6
11-7
11-8
11-9
11-10
11-11
11-12
11-13
11-14
11-15
11-16
11-17
11-18
20-1
20-2
20-3
20-4
20-5
20-6
20-7
20-8
20-9
20-10
20-11
30-1
30-2
30-3
30-4
30-5
30-6
30-7
30-8
30-9
30-10
E19 AUDIO I/O P.C. BOARD
E16 JACK P.C. BOARD
E17 JACK VR P.C. BOARD
ATTACHED WITH VR
ATTACHED WITH CONNECTOR
E18 HEADPHONES P.C. BOARD
E15 MONITOR VR P.C. BOARD
E14 MONITOR P.C. BOARD
ATTACHED WITH VR
E13 FRONT P.C. BOARD
E1 SYSTEM CONTROL & TC P.C. BOARD
E20 VOLUME P.C. BOARD
E21 METER P.C. BOARD
E22 METER SELECT P.C. BOARD
ATTACHED WITH SWITCH
ATTACHED WITH VR

2. FRAME & CASING PARTS (1)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1		VYF1880	CASSETTE COVER U	1	
1-1		VHD0602	CASSETTE COVER SCREW	2	
1-2		VQL6100	CASSETTE COVER LABEL	1	
2		VGP3228	SERVICE COVER	1	
3		VHD0338	SERVICE COVER SCREW	2	
4		VYP4148	TOP PANEL U	1	
4-1		VHD0314	TOP PANEL SCREW (A)	2	
4-2		VKA0131	TOP PANEL FOOT	2	
4-3		VMX1162	NYLON WASHER	4	
4-4		VHD0315	TOP PANEL SCREW (B)	2	
4-5		VGM0955	TOP PANEL	1	
5		VGM0957	REAR PANEL	1	
6		VYP4150	SIDE PANEL U	1	
6-1		VMS4210	STRAP PIN	1	
6-2		VGM0904	SIDE PANEL	1	
7		VGU4554	SLIDE SWITCH KNOB	21	
8		VGU4555	SLIDE SWITCH KNOB (L)	2	
9		VGU3465	SLIDE SWITCH KNOB (1)	4	
10		VGF0255	SWITCH COVER A	4	
11		VYP5202	FRONT PANEL U	1	
11-1		VMG0371	SLIDE SWITCH SEAL (B)	2	
11-2		VMP3796	BUTTON RUBBER HOLDER	1	
11-3		VGU5975	RUBBER BUTTON	1	
11-4		VGU3462	MODE SELECT KNOB (A)	1	
11-5		VGL0293	LED COVER	1	
11-6		VMP1153	RUBBER PLATE (A)	1	
11-7		VGU3463	MODE SELECT KNOB (B)	1	
11-8		VMP1154	RUBBER PLATE (B)	1	
11-9		VGH3196	FRONT DOOR PLATE	1	
11-10		VGH3052	METER SELECT PLATE	1	
11-11		VGH3051	AUDIO METER PLATE	1	
11-12		VGH3049	AUDIO VOLUME PLATE	1	
11-13		VMC0229	FRONT DOOR SPRING	1	
11-14		VDB0969	FRONT DOOR SHAFT	1	
11-15		VKF1902	FRONT DOOR	1	
11-16		VMS3300	FRONT DOOR PIN	2	
11-17		VMG0372	SLIDE SWITCH SEAL (C)	3	
11-18		VMG0378	AUDIO VR SEAL	4	
12		VST0059	POWER SWITCH	1	
13		VMG0399	METER PACKING	4	
14		VSE0098	AUDIO METER	3	
15		VSE0099	TRACKING METER	1	
16		VMG0398	METER HOLDER	2	
17		VMS4767	METER SPACER	1	
18		VMP3816	METER BRACKET	1	
19		VGU3466	AUDIO VR KNOB	4	
20		VEJ1366	JACK PANEL U	1	
20-1		VKF0834	HEADPHONES JACK COVER	1	
20-2		VMS4210	STRAP PIN	1	
20-3		VMG0372	SLIDE SWITCH SEAL (C)	3	
20-4		VMG0371	SLIDE SWITCH SEAL (B)	13	
20-5		VMG0373	VOLUME SEAL	2	
20-6		VGH3197	AUDIO JACK PLATE	1	
20-7		VGH3046	VIDEO JACK PLATE	1	
20-8		VGH3050	MONITOR SWITCH PLATE	1	
20-9		VJS1956	9P D-SUB CONNECTOR	1	
20-10		VMS2724	D-SUB SCREW	2	
20-11		VGH3048	EXT DC PLATE	1	
21		VGU3917	MONITOR LEVEL KNOB	1	
22		VMG0312	RUBBER CAP	4	
23		VMX1164	XLR SPACER	6	
24		VJS2614	XLR CONNECTOR (FEMALE)	4	
25		VJS1957	CAMERA CONNECTOR	1	
26		VJP3167	EXT DC SOCKET	1	
27		VJS2755A004	DC OUT SOCKET	1	
28		VJJ0091	BNC CONNECTOR	8	
29		VJP1894	XLR CONNECTOR (MALE)	2	
30		VYP4149	BOTTOM PANEL U	1	
30-1		VGU6008	BATTERY DOOR OPENER	1	
30-2		VMB1654	BATTERY DOOR SPRING	2	
30-3		VKF1913	BATTERY DOOR	1	
30-4		VMS3300	BATTERY DOOR PIN	2	
30-5		VHD0406	DOOR OPENER SCREW	1	
30-6		VMZ1207	DOOR SHEET	1	
30-7		VDB1191	BATTERY DOOR SUPPORTER	1	
30-8		VKA0058	RUBBER FOOT	2	
30-9		VGM0956	BOTTOM PANEL	1	
30-10		VKA0132	BOTTOM FOOT CUSHION	2	
31		VGU3459	VOLUME KNOB	2	
35		VGQ1882	LED HOLDER (1)	1	
36		VGQ1200	LED HOLDER (2)	1	
37		VMS4992	SPACER PIN	3	
38		VSC3763	SHIELD PLATE	1	
50		XNG6C	NUT	2	
51		XSB3+8FZ	SCREW	23	
52		XSB4+16FZS	SCREW	4	
53		XSN26+10FCS	SCREW	12	
54		XSN26+4	SCREW	29	
55		XSN26+6FCS	SCREW	4	
56		XSN26+8FCS	SCREW	2	
57		XSS26+6FZ	SCREW	4	
58		XST26+4	SCREW	10	
59		XTV3+6FR	SCREW	4	
60		XYNV3+K6FR	SCREW	3	
61		XNKV0001	NYLON WASHER	11	
62		XWA26B	WASHER	1	
63		XWE5FZ	WASHER	6	
64		XWG26	WASHER	1	
65		XWGV25D5G	WASHER	2	
66		XWGV25D6G	WASHER	2	
67		VWZ0036	SILICON TUBE (3M)	1	

3. Frame & Casing Parts (2)



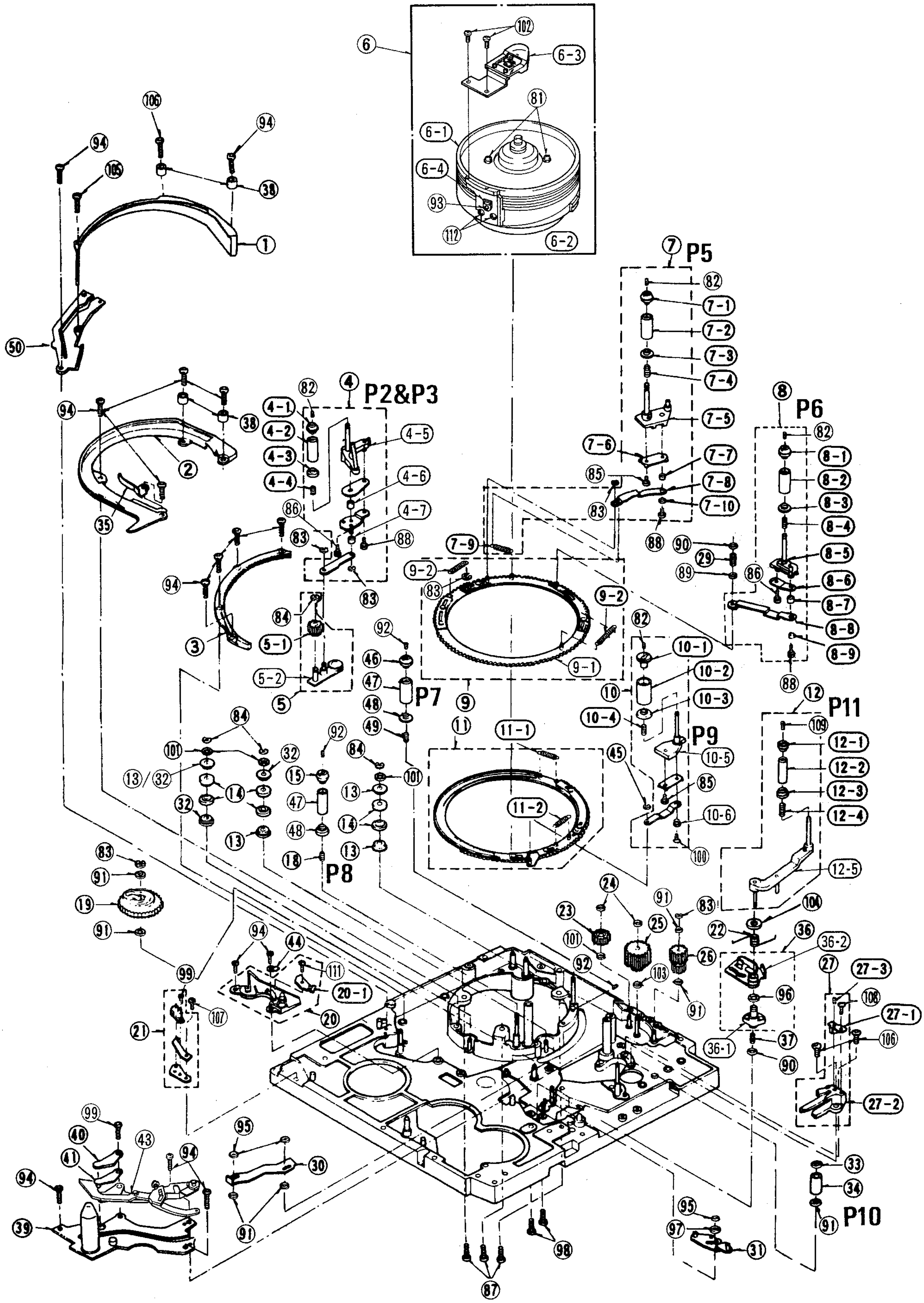
E2 SERVO P.C. BOARD
E7 VIDEO 4 P.C. BOARD
E6 VIDEO 3 P.C. BOARD
E5 VIDEO 2 P.C. BOARD
E4 VIDEO 1 P.C. BOARD
E3 VIDEO MOTHER P.C. BOARD
E12 POWER P.C. BOARD
E9 AUDIO P.C. BOARD
E8 AUDIO MOTHER P.C. BOARD
E10 DRIVER P.C. BOARD
E11 DECODER & CTCM P.C. BOARD
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
18
18-1
18-2
⑲
⑳
21
22
23
24
25
26
31
32
33
34
35
36
37
38
39
40
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66

3. FRAME & CASING PARTS (2)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1		VMZ0931	SHIELD PLATE	1	
2		VMP1147	POWER JACK ANGLE	1	
3		VJJ0142	DC POWER JACK	1	
4		VMD2033	SIDE FRAME (L)	1	
5		VMP1804	SUB BRACKET	1	
6		VMP3794	RACK BRACKET	2	
7		VGQ1161	P.C.BOARD RACK	8	
8		VJF0542	BATTERY HOLDER COVER	1	
9		VGQ1411	BATTERY LEVER	2	
10		VMB1784	BATTERY LEVER SPRING	2	
11		VGU4051	BATTERY HOLDER (A)	1	
12		VGU4052	BATTERY HOLDER (B)	1	
13		VGQ1463	BATTERY GUIDE (L)	1	
14		VGQ1462	BATTERY GUIDE (R)	1	
15		VMB2256	BATTERY STOPPER SPRING	1	
16		VGQ1412	BATTERY STOPPER	1	
17		VJF0541	BATTERY HOLDER	1	
18		VYQ0116	BATTERY SPRING U	1	
18-1		VMG0378	RUBBER BUSHING	2	
18-2		VMB1782	BATTERY SPRING	2	
19		VMX1201	WIRE COVER	1	
20		VEJ0750	BATTERY TERMINAL BOARD	1	
21		VMP1805	BRACKET (L)	1	
22		VMD1209	BATTERY COVER	1	
23		VMD0931	SIDE FRAME (R)	1	
24		VMZ1713	P.C.BOARD BARRIER (S)	1	
25		VSQ0560	BREAKER	1	
26		VMZ0932	SHIELD SHEET	1	
31		VMS4992	P.C.BOARD SPACER	4	
32		VSC3744	SHIELD PLATE (V3)	1	
33		VQL6871	VOLUME LABEL (V3)	1	
34		VMP1149	P.C.BOARD ANGLE (V)	3	
35		VQL6870	VOLUME LABEL (V2)	1	
36		VQL6869	VOLUME LABEL (V1)	1	
37		VSC2270	SHIELD PLATE (V1)	1	
38		VMP3795	P.C.BOARD ANGLE (A)	1	
39		VMP3792	P.C.BOARD HOLDER (A)	1	
50		XSB3+6	SCREW	4	
51		XSB3+6FZ	SCREW	4	
52		XSS26+6	SCREW	3	
53		XTB3+6F	SCREW	8	
54		XTB3+6FFZ	SCREW	1	
55		XTN3+5J	SCREW	9	
56		XTS3+6F	SCREW	3	
57		XTV3+6F	SCREW	16	
58		XTV3+6FR	SCREW	23	
59		XTV3+8F	SCREW	3	
60		XYN2+C6	SCREW	2	
61		XYN3+C8	SCREW	5	
62		XYN3+F6	SCREW	2	
63		XYNV3+K6FR	SCREW	8	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks

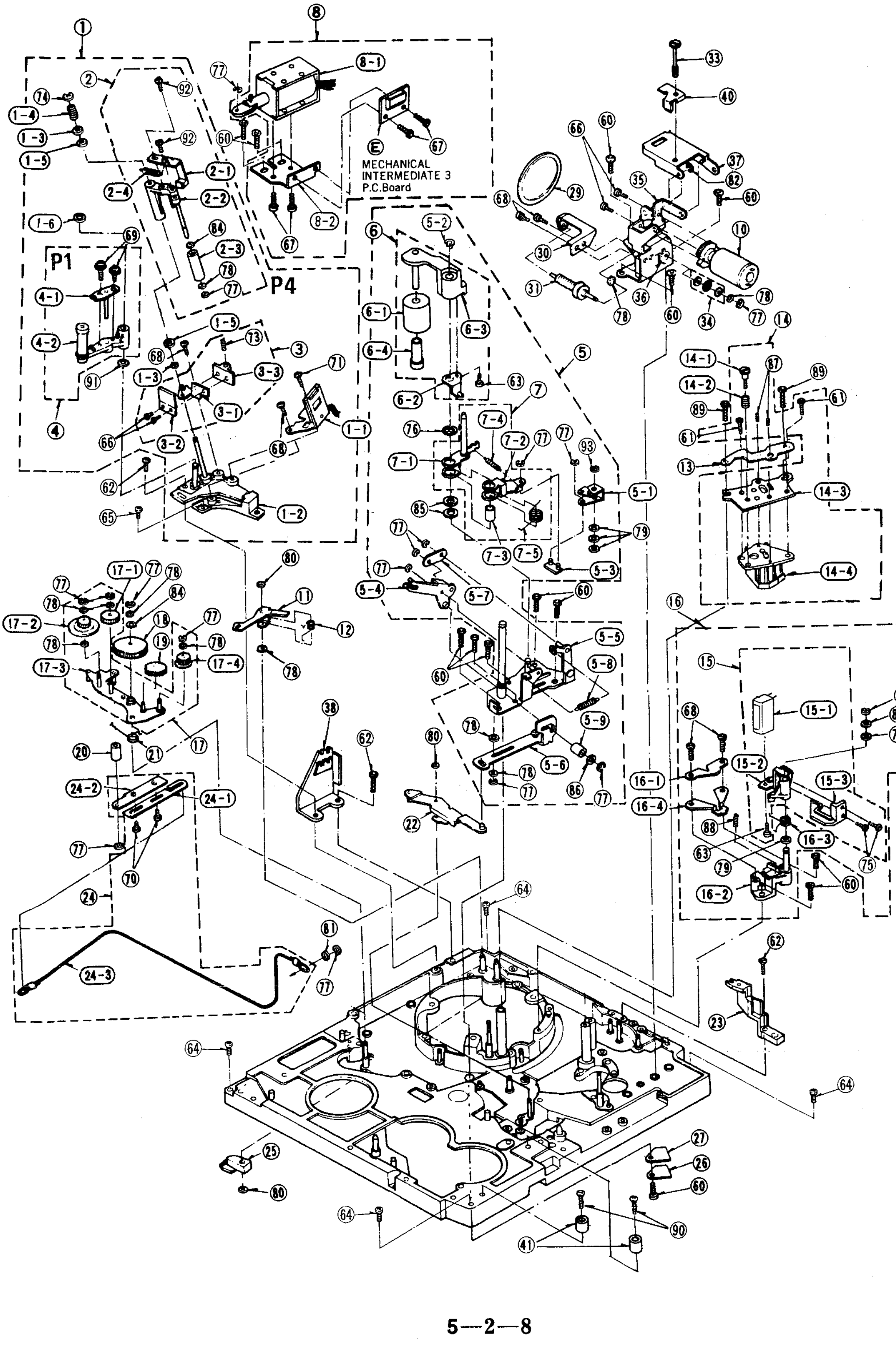
4. Mechanism Component Parts (1)


6
102
6-3
81
6-1
6-4
93
112
6-2
106
94
94
105
38
1
50
7 P5
82
7-1
7-2
7-3
7-4
7-5
7-6
7-7
85
7-8
83
7-10
88
94
38
2
35
4 P2&P3
82
4-1
4-2
4-3
4-4
4-5
4-6
4-7
86
83
88
83
94
3
84
5-1
5-2
5
8 P6
82
8-1
8-2
8-3
8-4
8-5
8-6
8-7
8-8
8-9
88
90
29
89
86
7-9
9-2
83
9-2
9-1
9
92
46
47
P7
48
49
82
10-1
10-2
10
10-3
10-4
P9
10-5
85
10-6
100
45
11
11-1
11-2
12 P11
109
12-1
12-2
12-3
12-4
12-5
84
101
13/32
32
14
32
13
92
15
47
48
18
P8
84
101
13
14
13
83
91
19
91
99
94
44
111
20-1
20
21
107
24
23
25
101
92
103
26
91
83
22
104
36
36-2
27
27-3
108
27-1
96
36-1
37
90
106
27-2
99
40
43
41
94
94
39
95
30
91
33
34
91
P10
95
97
31
98
87

4. MECHANISM COMPONENT PARTS (1)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1		VMD1202	LOADING GUIDE P6	1	
2		VMD1195	LOADING GUIDE (B)	1	
3		VDG0377	GUIDE GEAR	1	
4		VXA3198	P2 POST (W) U	1	
4-1		VMS3704	UPPER FLANGE (P3)	1	
4-2		VXP0936	P3 POST ROLLER U	1	
4-3		VMS2801	LOWER FLANGE (P3)	1	
4-4		VMB1623	POST SPRING M (P3)	1	
4-5		VXA3199	P2 POST (1) U	1	
4-6		VMX1317	SLIDE PLATE SPACER	1	
4-7		VMX1174	P2 POST COLLAR	1	
5		VXA2758	POST GEAR U	1	
5-1		VDG0378	GEAR	1	
5-2		VXA2759	POST GEAR (1) U	1	
6		VEG1005	DRUM U	1	
6-1		VEH0586	UPPER DRUM U	1	
6-2		VMD2055	RT ARM	1	
6-3		VSX0080	BRUSH U	1	
6-4		VEK2372	DEW SENSOR	1	
7		VXA3201	P5 POST U	1	
7-1		VMS3704	UPPER FLANGE (P5)	1	
7-2		VXP0936	ROLLER ASSY U (P5)	1	
7-3		VMS2801	LOWER FLANGE (P5)	1	
7-4		VMB1623	POST SPRING (P5)	1	
7-5		VXA3202	P5 POST (1) U	1	
7-6		VMA6976	SLIDE PLATE (P5)	1	
7-7		VMX1138	ROD COLLAR (P5)	1	
7-8		VMM0183	ROD D (P5)	1	
7-9		VMB1791	P5 ARM SPRING (P5)	1	
7-10		VMX1131	SPACER (P5)	1	
8		VXA3203	P6 POST U	1	
8-1		VMS3705	UPPER FLANGE (P6)	1	
8-2		VXP0937	ROLLER ASSY. U (P6)	1	
8-3		VMS3706	LOWER FLANGE (P6)	1	
8-4		VMB1623	POST SPRING (P6)	1	
8-5		VXA3248	POST (1) U (P6)	1	
8-6		VMA7269	SLIDE PLATE (P6)	1	
8-7		VMX1321	ROD COLLAR (P6)	1	
8-8		VMM0194	ROD (P6)	1	
8-9		VMX0687	SPACER (P6)	1	
9		VXA4111	S LOADING U	1	
9-1		VXA4112	S LOADING (1) U	1	
9-2		VMB1617	P6 LOCK SPRING	2	
10		VXA3177	P9 POST U	1	
10-1		VMS3316	UPPER FLANGE (P9)	1	
10-2		VXP0815	ROLLER ASSY. U (P9)	1	
10-3		VMS3317	LOWER FLANGE (P9)	1	
10-4		VMB1677	POST SPRING (P9)	1	
10-5		VXA2785	P9 POST BASE U	1	
10-6		VMX1139	P9 POST SPACER	1	
11		VXA4100	T. LOADING (2) U	1	
11-1		VMB1628	EJECT SLIDE SPRING	1	
11-2		VMB2174	LOADING SLIDE SPRING	1	
12		VXL1737	P11 ARM BASE U	1	
12-1		VMS3705	UPPER FLANGE (P11)	1	
12-2		VXP0937	ROLLER ASSY U (P11)	1	
12-3		VMS3614	LOWER FLANGE (P11)	1	
12-4		VMB1677	POST SPRING (P11)	1	
12-5		VXL1582	P11 ARM U	1	
13		VDP1129	RING ROLLER AL	4	
14		VDP1103	RING ROLLER B	6	
15		VMS3703	UPPER FLANGE (PB)	1	
16		VXP0938	POST ROLLER U (PB)	2	
18		VMB1677	POST SPRING (PB)	1	
19		VDG0457	LOADING CAM GEAR	1	
20		VXA3270	LOADING GUIDE (C)	1	
20-1		VEK3728	PHOTO SENSOR U	1	
21		VEK3220	SAFETY TAB SW U	1	
22		VMB1792	P11 SPRING	1	
23		VDG0381	LOADING INTERMEDIATE GEAR	1	
24		VMX0983	CUT WASHER	2	
25		VDG0380	SUPPLY GEAR	1	
26		VDG0382	LOADING WHEEL GEAR	1	
27		VXA3233	P9 STOPPER U	1	
27-1		VMC0254	P9 ADJ PLATE	1	
27-2		VMA7281	P9 STOPPER	1	
27-3		VHD0356	HEX-SCREW	1	
29		VMB1790	P6 ROD SPRING	1	
30		VMM0196	EJECT ROD	1	
31		VXL1718	P11 CONTROL ARM U	1	
32		VDP1102	RING ROLLER A	2	
33		VMX1042	WASHER (P10)	1	
34		VDP1100	P10 ROLLER	1	
35		VMC0281	P5 GUIDE SPRING	1	
36		VXA3218	P11 ARM BASE U	1	
36-1		VDB0874	P11 ARM BASE	1	
36-2		VXA3207	P11 DRIVE BASE U.	1	
37		VMB1672	P11 SPRING	1	
38		VMX1316	GUIDE STOPPER	4	
39		VXA3235	P9 GUIDE U	1	
40		VMD1197	MAIN LED COVER	1	
41		VEK3607	MAIN LED PLATE	1	
42		VMD1196	MAIN LED CASE	1	
43		VXA4868	A/C HEAD CLEANER U	1	
44		VMA7252	WIRE GUIDE	1	
45		VDP1131	P9 POST ARM CAP	1	
46		VMS3704	UPPER FLANGE (P7)	1	
47		VXP0938	P7 POST ROLER U (P8)	1	
48		VMX1161	LOWER FLANGE (P7)	2	
49		VMB1623	POST SPRING (P7)	1	
50		VMD1203	LOADING GUIDE P3	1	
81		XYN3+A8BW	SCREW	2	
82		XXE2C25FP	HEX-SCREW	4	
83		XUC15FP	E-RING	6	
84		XUC2FP	E-RING	4	
85		XQN2+A3	SCREW	2	
86		XQN2+A4	SCREW	2	
87		XYN3+C8	SCREW	3	
88		XQN2+A6	SCREW	3	
89		XWGV2Y4G	WASHER	1	
90		XWGV0007	WASHER	2	
91		XWGV2D4G	WASHER	7	
92		XXE2C25FP	HEX-SCREW	3	
93		XYN2+C3	SCREW	1	
94		XTV26+6F	SCREW	15	
95		XWGV0006	WASHER	3	
96		XWGV4Y6G	WASHER	1	
97		XWGV2Y6G	WASHER	1	
98		XYNV26+K6	SCREW	2	
99		XTV26+12F	SCREW	1	
100		XQS2+A4	SCREW	1	
101		XWGV3D6G	WASHER	4	
102		XYN26+C6	SCREW	2	
103		XWGV3Z6G	WASHER	1	
104		XWGV2Y5G	WASHER	1	
105		XSN26+4	SCREW	1	
106		XTV26+8F	SCREW	3	
107		XTV2+5F	SCREW	1	
108		XYN2+C3	SCREW	1	
109		XXE2C25FPS	HEX-SCREW	1	
110		XYN2+J6	SCREW	2	
111		XQN2+C2	SCREW	1	
112		XYN26+C5	SCREW	2	

5. Mechanism Component Parts (2)



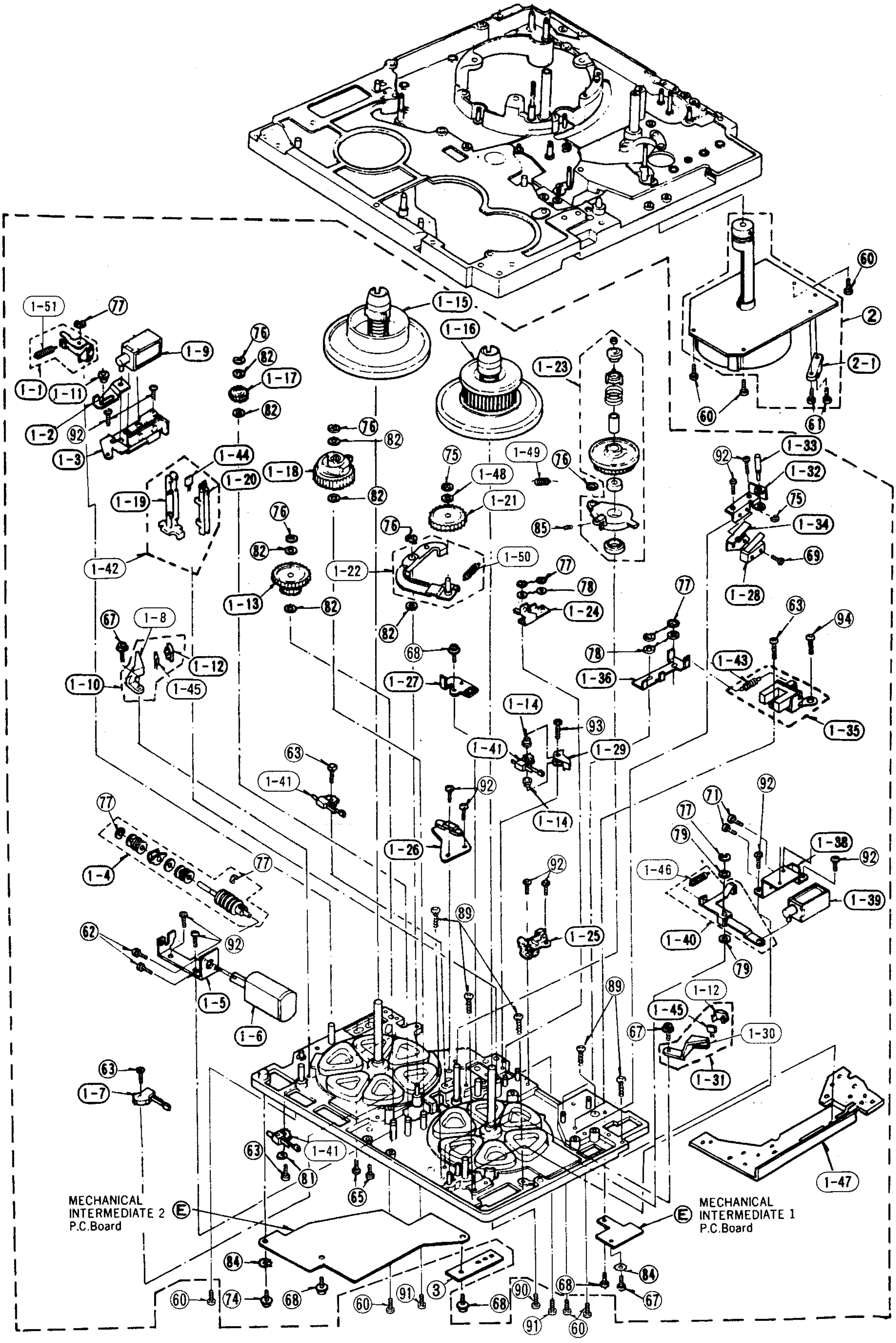
①
②
③
④
⑤
⑥
⑦
⑧
8-1
8-2
Ⓔ
MECHANICAL
INTERMEDIATE 3
P.C.Board
P1
P4
1-1
1-2
1-3
1-4
1-5
1-6
2-1
2-2
2-3
2-4
3-1
3-2
3-3
4-1
4-2
5-1
5-2
5-3
5-4
5-5
5-6
5-7
5-8
5-9
6-1
6-2
6-3
6-4
7-1
7-2
7-3
7-4
7-5
⑩
⑪
⑫
⑬
⑭
14-1
14-2
14-3
14-4
⑮
15-1
15-2
15-3
⑯
16-1
16-2
16-3
16-4
⑰
17-1
17-2
17-3
17-4
⑱
⑲
⑳
㉑
㉒
㉓
㉔
24-1
24-2
24-3
㉕
㉖
㉗
㉙
㉚
㉛
㉝
㉞
㉟
㊱
㊲
㊳
㊵
(41)
(60)
(61)
(62)
(63)
(64)
(65)
(66)
(67)
(68)
(69)
(70)
(71)
(73)
(74)
(75)
(76)
(77)
(78)
(79)
(80)
(81)
(82)
(83)
(84)
(85)
(86)
(87)
(88)
(89)
(90)
(91)
(92)
(93)

5. MECHANISM COMPONENT PARTS (2)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1		VXA3194	P2 STOPPER BASE U	1	
1-1		VXA3186	P2 STOPPER U	1	
1-2		VXA3195	P2 STOPPER BASE (1) U	1	
1-3		VMX1161	BEARING HOLDER	2	
1-4		VMB1653	SPRING	1	
1-5		VDB0778	BEARING	2	
1-6		VMX1427	WASHER	1	
2		VXL1735	P4 ARM U	1	
2-1		VXA3237	MAGNET U	1	
2-2		VXL1551	P4 ARM (1) U	1	
2-3		VDP1100	P4 ROLLER	1	
2-4		VMB1773	SPRING (P4)	1	
3		VXA2925	TENSION PLATE SPRING	1	
3-1		VMA7073	ADJ BASE	1	
3-2		VMC0253	TENSION BASE	1	
3-3		VMA7072	TENSION BASE (2)	1	
4		VXL1716	P1 ARM U	1	
4-1		VXA2788	P1 ARM ADJ BASE U	1	
4-2		VXL1717	P1 ARM (1) U	1	
5		VXA3196	PINCH ROLLER BASE U	1	
5-1		VXL1734	TOGGLE ARM A	1	
5-2		VMB1625	PINCH ARM CAP	1	
5-3		VXL1720	TOGGLE ARM U	1	
5-4		VXL1537	PINCH ARM LEVER	1	
5-5		VXA3234	PINCH ROLLER BASE (1) U	1	
5-6		VXL1539	ROD	1	
5-7		VML1993	TOGGLE LEVER	1	
5-8		VMB1675	TOGGLE SPRING	1	
5-9		VMX1170	ARM ROLLER	1	
6		VXL1554	PINCH ARM U	1	
6-1		VXP0805	PINCH ROLLER	1	
6-2		VXL1555	PINCH ARM HOLDER	1	
6-3		VXL1538	PINCH ARM (1) U	1	
6-4		VMX1133	PINCH ROLLER SREAVE	1	
7		VXL1726	PINCH CONTRTOL ARM U	1	
7-1		VXL1733	PINCH CONTROL ARM (B) U	1	
7-2		VML1947	PINCH CONTROL ARM (A) U	1	
7-3		VMX1136	PINCH ARM COLLAR	1	
7-4		VMB1626	PINCH SPRING	1	
7-5		VMB1795	PINCH ARM SPRING	1	
8		VXA3210	PINCH SOLENOID BASE U	1	
8-1		VEK5607	PINCH SOLENOID	1	
8-2		VMA7055	PINCH SL BASE	1	
10		VEM0270	LOADING MOTOR	1	
11		VML2111	CONTROL ARM	1	
12		VMB1620	CONTROL ARM SPRING	1	
13		VMA6982	ADJ PLATE	1	
14		VED0180	A/C HEAD U	1	
14-1		VHD0321	SCREW	1	
14-2		VMB1618	HEAD MOUNT SPRING	1	
14-3		VMA7611	HEAD MOUNT BASE	1	
14-4		VBR0180	A/C HEAD	1	
15		VXL1714	FE HEAD ARM U	1	
15-1		VBS0040	FE HEAD	1	
15-2		VXL1715	FE HEAD ARM (1) U	1	
15-3		VMD1200	ARM GUIDE	1	
16		VXA3192	P6 STOPPER BASE U	1	
16-1		VMA7263	P6 STOPPER	1	
16-2		VXA3193	P6 STOPPER BASE (1) U	1	
16-3		VMB1793	FE HEAD ARM SPRING	1	
16-4		VMC0363	P6 BOARD STOPPER	1	
17		VXA2859	EE(EMERGENCY EJECT) IDLER U	1	
17-1		VDG0376	EE GEAR (4)	1	
17-2		IDLER U	1		
17-3		VXL1580	IDLER LEVER (1) U	1	
17-4		VDG0373	EE GEAR (1)	1	
18		VDG0459	EE GEAR (3)	1	
19		VDG0374	EE GEAR (2)	1	
20		VDP0866	BRAKE ROLLER	1	
21		VMB1873	IDLER SPRING	1	
22		VXL1544	PINCH CAM ARM U	1	
23		VMA7251	P5 STOPPER	1	
24		VXQ0009	EE WIRE U	1	
24-1		VMA6960	ADJ BASE (A)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
24-2		VMA6968	ADJ BASE (B)	1	
24-3		VXQ0007	EE WIRE U	1	
25		VMD0960	WIRE GUIDE (1)	1	
26		VMZ1152	INSULATION SHEET	1	
27		VEK3608	MAIN PHOTO U	1	
29		VDV0162	LOADING BELT	1	
30		VXA2903	WORM SUPPORT PLATE	1	
31		VXP0814	WORM GEAR U	1	
33		VHD0358	LOCK SCREW	1	
34		VDB0835	BEARING	1	
35		VXA2760	MOTOR BASE (1) U	1	
36		VDB0833	WORM PLATE	1	
37		VXA2800	BELT COVER U	1	
38		VMA7276	SPRING HOOK	1	
40		VMA7079	WIRE COVER	1	
41		VMD1354	HOLDER STOPPER	2	
60		XTV26+6F	SCREW	13	
61		XSN26+6	SCREW	2	
62		XTV26+8F	SCREW	3	
63		XQN2+A4	SCREW	2	
64		XYN26+C10	SCREW	4	
65		XSN2+4	SCREW	1	
66		XYN2+C4	SCREW	4	
67		XYN26+C4	SCREW	4	
68		XYNV26+K5	SCREW	6	
69		XYN2+F4	SCREW	2	
70		XQN2+A1.5	SCREW	2	
71		XTV26+5F	SCREW	1	
73		XXE2C8FPS	HEX-SCREW	1	
74		XWGV0007	WASHER	1	
75		XQN2+C4	SCREW	2	
76		XUC4FP	E-RING	1	
77		XUC15FP	E-RING	15	
78		XWGV2D4G	WASHER	10	
79		XWGV3D6G	WASHER	5	
80		XWGV0006	WASHER	3	
81		XWG2	WASHER	1	
82		XUC25FP	E-RING	2	
83		XWGV3Y6G	WASHER	1	
84		XWGV2Y4G	WASHER	2	
85		XWGV5D8G	WASHER	2	
86		XWGV2Y5G	WASHER	1	
87		XXE3A5FPS	HEX-SCREW	2	
88		XXE2C6FP	HEX-SCREW	1	
89		XYNV26+K8	SCREW	2	
90		XTS26+6F	SCREW	2	
91		XWGV25Y6G	WASHER	1	
92		XYN2+C5	SCREW	2	
93		XUC2FP	E-RING	1	

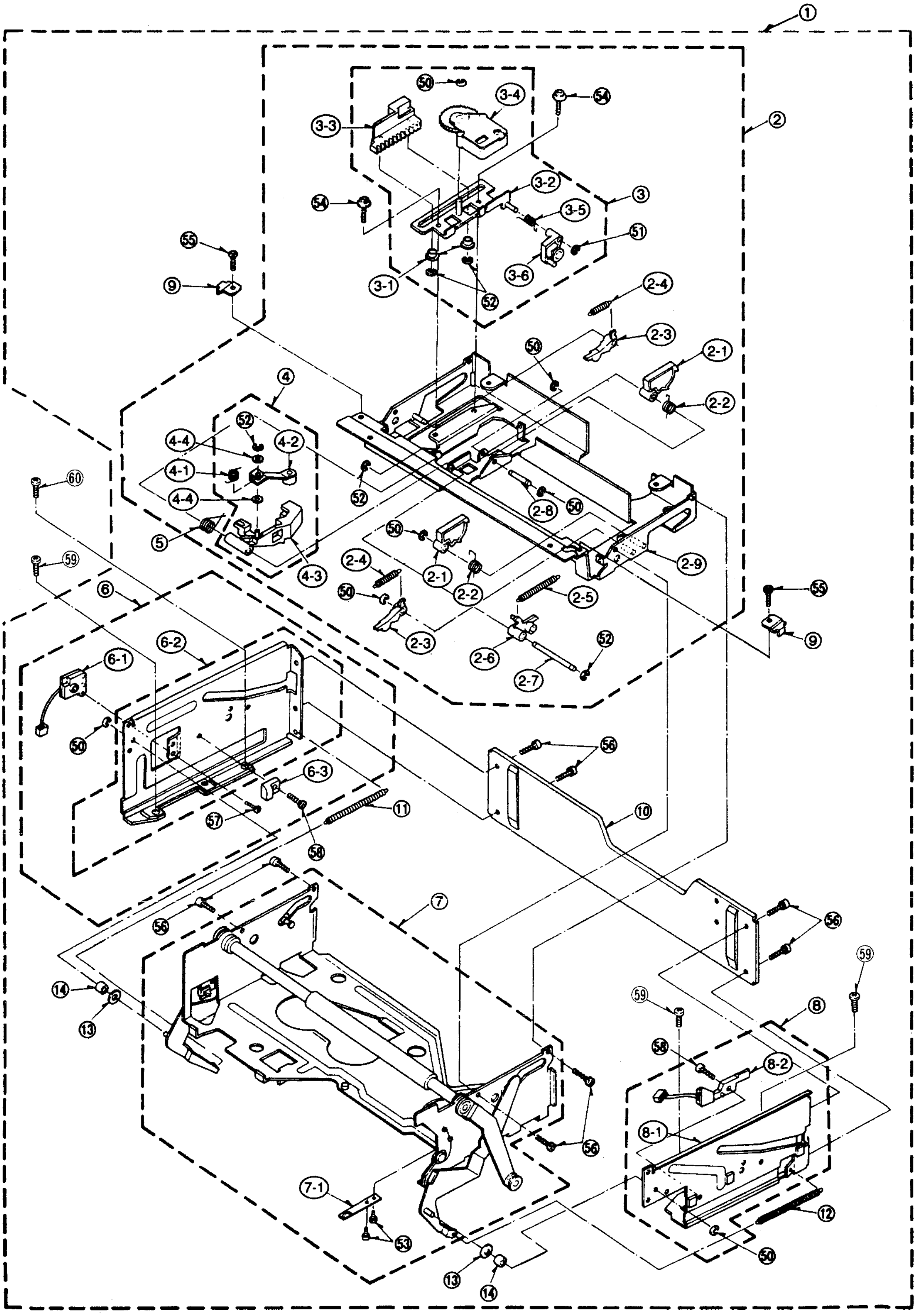
6. Mechanism Component Parts (3)


1-51
77
1-9
1-1
1-11
1-2
92
1-3
76
82
1-17
82
1-15
1-16
1-23
60
2
2-1
60
60
61
76
82
1-44
1-20
1-18
82
75
1-48
1-49
76
1-21
1-19
76
82
76
85
1-33
92
1-32
75
1-34
69
1-42
1-22
1-50
77
78
1-13
82
82
1-24
1-28
77
63
94
67
1-8
1-12
1-10
1-45
68
1-27
78
1-36
1-43
1-35
1-14
93
1-41
1-29
63
1-41
92
1-14
71
92
77
1-26
79
1-38
92
77
1-4
77
1-46
1-39
92
89
1-25
1-40
79
62
92
1-5
1-6
89
1-12
1-45
67
1-30
1-31
63
1-7
1-41
63
81
65
1-47
MECHANICAL INTERMEDIATE 2 P.C.Board
E
E
MECHANICAL INTERMEDIATE 1 P.C.Board
84
84
60
74
68
60
91
3
68
90
68
67
91
60

6. MECHANISM COMPONENT PARTS (3)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1-1		VXL1574	SUPPLY BRAKE UNIT	1	
1-2		VML2114	S.BRAKE LEVER	1	
1-3		VXA2843	S.SOLENOID BASE	1	
1-4		VXP0848	WORM GEAR (1) U	1	
1-5		VMA7039	U/D MOTOR MOUNTING PLATE	1	
1-6		VRD0029	UP DOWN MOTOR	1	
1-7		VSH0034	LEAF SW	1	
1-8		VMD0611	FG SUPPORT (1)	1	
1-9		VSJ0075	SUPPLY BRAKE SOLENOID	1	
1-10		VXA2046	FG HOLDER U	1	
1-11		VMX1318	S.BRAKE PLATE SPACER	1	
1-12		VMD0621	FG SUPPORT (2)	2	
1-13		VDG0392	WORM WHEEL GEAR (1)	1	
1-14		VMX1319	KICK LEVER COLLAR	2	
1-15		VXR0218	SUPPLY REEL TABLE	1	
1-16		VXR0161	TAKE-UP REEL TABLE	1	
1-17		VDG0393	INTERMIDATE GEAR (1)	1	
1-18		VDG0418	CAM GEAR (1)	1	
1-19		VMX1128	LED HOLDER (A)	1	
1-20		VMX0683	LED HOLDER (L)	1	
1-21		VXP0929	IDLER GEAR AU	1	
1-22		VXL1722	IDLER GEAR GASE U	1	
1-23		VXR0163	SMALL REEL U	1	
1-24		VMM0193	EJECT SLIDE	1	
1-25		VXA3395	EJECT LOCK U	1	
1-26		VEK3609	UNLOADING DETECT PHOTO U	1	
1-27		VMA7266	IDLER GEAR STOPPER	1	
1-28		VSH0031	MICRO SW	1	
1-29		VML2116	SW KICK LEVER	1	
1-30		VMD1006	FG SUPPORT	1	
1-31		VXA2847	FG HOLDER (R) U	1	
1-32		VMA7158	LARGE CASSETTE DETECT SWI	1	
1-33		VMS3611	SW PIN	1	
1-34		VMC0314	SW SPRING PLATE	1	
1-35		VEK3610	LOADING DETECT PHOTO U	1	
1-36		VMM0192	SOFT BRAKE RELEASE ROD	1	
1-38		VMA7035	TAKE-UP SOLENOID BASE	1	
1-39		VSJ0077	TAKE-UP BRAKE SOLENOID	1	
1-40		VXL1880	TAKE-UP BRAKE UNIT	1	
1-41		VSH0026	LEAF SW	3	
1-42		VXA2854	LED BASE U	1	
1-43		VMB1794	RELEASE ROD SPRING	1	
1-44		LN59NV	LED	1	
1-45		HW300B	FG SENSOR	2	
1-46		VMB1967	T BRAKE SPRING	1	
1-47		VXA3558	SUPPORT ANGLE U	1	
1-48		VMX1327	BEARING COLLAR	1	
1-49		VMB1659	SMALL REEL SPRING	1	
1-50		VMB1661	GEAR BASE SPRING	1	
1-51		VMB1657	S BRAKE SPRING	1	
2		VEM0322	CAPSTAN U	1	
2-1		VBK0041	MR SENSOR	1	
3		VJF0210	BINDER	1	
60		XTV26+6F	SCREW	7	
61		XYN26+J6	SCREW	2	
62		XYN2+C3	SCREW	2	
63		XYN2+C5	SCREW	4	
65		XQN2+C2	SCREW	2	
67		XYN2+F5	SCREW	2	
68		XYNV26+K5	SCREW	4	
69		XSN2+8	SCREW	1	
70		XQN16+A3	SCREW	1	
71		XQN2+C3	SCREW	2	
72		XSN2+3	SCREW	1	
74		XYN26+F5	SCREW	2	
75		XUC2FP	E-RING	2	
76		XUC25FP	E-RING	5	
77		XUC15FP	E-RING	7	
78		XWGV2Y4G	WASHER	4	
79		XWGV2D4G	WASHER	2	
81		XWE2	WASHER	1	
82		XWGV3D6G	WASHER	7	
84		XWC26B	SAW-TOOTH WASHER	1	
85		XXE26W3FP	HEX-SCREW	1	
89		XYN26+C4	SCREW	5	
90		XTV26+10F	SCREW	1	
91		XTV26+8F	SCREW	2	
92		XYN26+C5	SCREW	10	
93		XYN2+C10	SCREW	1	
94		XYN26+K4	SCREW	1	

7. Cassette Compartment parts


①
②
③
50
3-4
54
3-3
3-2
54
3-5
51
55
3-1
3-6
9
52
2-4
2-3
50
2-1
2-2
④
52
4-4
4-2
4-1
52
60
4-4
2-8
50
5
50
4-3
2-4
2-1
2-2
2-9
59
50
55
2-5
⑥
2-3
9
52
6-2
2-6
6-1
2-7
50
56
6-3
11
57
58
10
⑦
56
56
59
14
13
59
⑧
58
8-2
56
8-1
7-1
12
53
50
13
14

7. CASSETTE COMPARTMENT PARTS

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1		VXA3589	CASSETTE COMPARTMENT U	1	
2		VXA3638	TOP PLATE U	1	
2-1		VML2279	ERROR INSERT STOPPER LEVER	2	
2-2		VMB1970	ERROR INSERT STOPPER SPRING	2	
2-3		VML2051	PRESSURE LEVER (R)	2	
2-4		VMB1616	CASSETTE PRESSURE SPRING	2	
2-5		VMB1681	PRESSURE LEVER SPRING	1	
2-6		VXL1897	PRESSURE LEVER	1	
2-7		VMS4047	CASSETTE GUIDE LEVER ANGLE	1	
2-8		VMS4048	STOP LEVER SHAFT	1	
2-9		VXA3640	TOP PLATE	1	
3		VXA3535	SLIDE GUIDE U	1	
3-1		VDP1151	SLIDE ROLLER	2	
3-2		VXA3559	SLIDE GUIDE	1	
3-3		VXA2891	SLIDE GEAR	1	
3-4		VDG0214	DUMPER	1	
3-5		VMB1953	S-CASSETTE OPENER SPRING	1	
3-6		VXL1887	S-CASSETTE OPENER	1	
4		VXL1885	S-CASSETTE GUIDE U	1	
4-1		VMB1952	S-CASSETTE LOCK SPRING	1	
4-2		VXA3641	S-CASSETTE GUIDE ROLLER ARM	1	
4-3		VXL1886	S-CASSETTE GUIDE	1	
4-4		XWGV2D4G	POLY SLIDER WASHER	2	
5		VMB1954	S-CASSETTE GUIDE SPRING	1	
6		VXA3591	SIDE PATE (R) SU	1	
6-1		VEK3255	PHOTO HOLDER (R) U	1	
6-2		VXA3639	SIDE PLATE (R) U	1	
6-3		VMD1009	HOLDER GUIDE	1	
7		VXA3590	CASSETTE HOLDER SU	1	
7-1		VXL1863	ROCK RELEASE LEVER	1	
8		VXA3592	SIDE PLATE (L) SU	1	
8-1		VXA3560	SIDE PLATE (L) U	1	
8-2		VEK3256	PHOTO HOLDER (L) U	1	
9		VMA7903	SIDE SUPPORTER	2	
10		VMA7905	REAR PLATE	1	
11		VMB1968	UPPER SPRING (R)	1	
12		VMB1969	UPPER SPRING (L)	1	
13		XWGV3Y12G	POLY SLIDER	2	
14		VDP0967	MAIN ARM ROLLER	2	
50		XUC25FP	E-RING	7	
51		XUC2FP	E-RING	1	
52		XUC15FP	E-RING	5	
53		XQN16+A16FZ	SCREW	2	
54		XYN26+F4	SCREW	2	
55		VHD0267	SCREW	2	
56		XYN26+C4	SCREW	8	
57		XTN2+5J	SCREW	1	
58		XSN26+4	SCREW	2	
59		XTV26+6F	SCREW	3	
60		XYN26+C4	SCREW	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks

Order No. VSD9503S599

Technical Bulletin

Supplement to the Service Manual

MII Video Product

Subject: Introduction of New DEC & CTCM (W4) P.C.Board

Please use this supplement together with the Service Manual(s) and model(s) (■) as follows:

	Model No.	Bulletin	Order No.	Effective from		Model No.	Bulletin	Order No.	Effective from
☐	AU-65E		VQS0264		☐	AU-665E		VQS0270	
☐	AU-63E		VQS0264		☐	AU-55HE		VSD9304M503	
☐	AU-62E		VQS0264		☐	AU-45HE		VSD9304M504	
■	AU-65HE	91	VSD9204M501	K4TNA - - -	■	AU-W35HE	24	VSD9406M506A/B	J4TNA - - -
☐	AU-63HE		VSD9204M501		☐	AU-W33HE		VSD9406M506A/B	
☐	AU-62HE		VSD9204M501		☐	AU-W32HE		VSD9406M506A/B	
■	AU-66HE	67	VSD9208M502	K4TNA - - -	☐	COMMON		----------	

Board : DEC & CTCM (W4 : VEP83199B)

To improve manufacturing productivity, a new DEC & CTCM (W4) P.C.Board has been introduced.

The following items are included in this Service Manual Supplement.

1) Electrical Adjustment Procedures.
2) Block Diagrams.
3) Schematic Diagrams.
4) Circuit Board Diagrams.
5) Electrical Replacement Parts List.

V 11368
V 06939
V 11883
V 17060 ✓
V 01462
V 01463

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

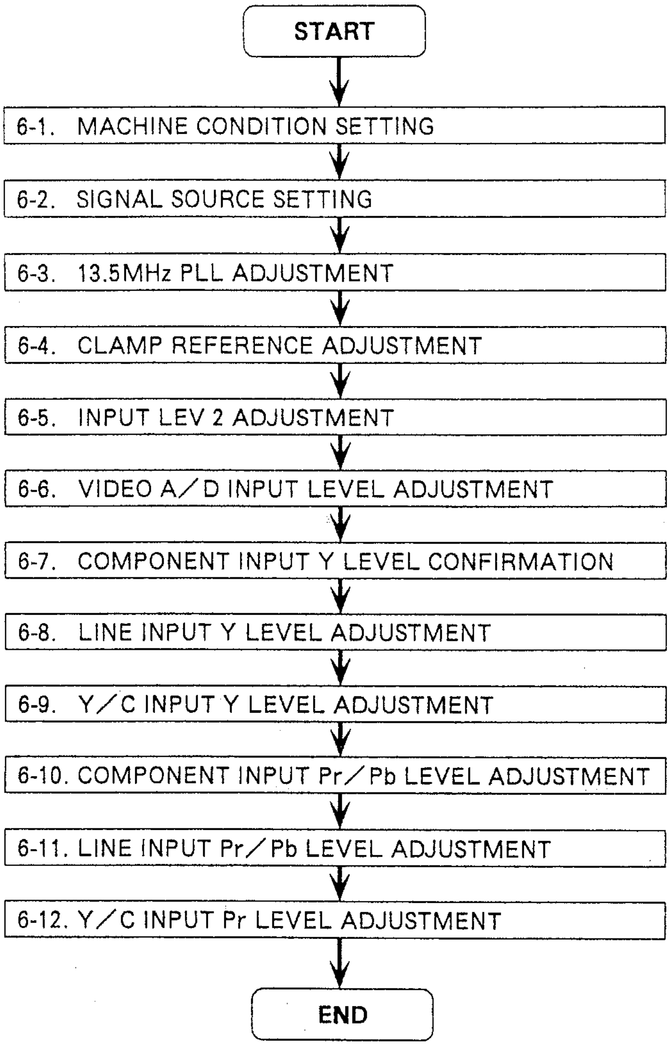
Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
	VEP83173A	VEP83199B	W4 DEC & CTCM	1	A	AU-66H / 65H
	VEP83173C	VEP83199B	W4 DEC & CTCM	1	A	AU-W35H

Panasonic

Printed in Japan

6. DEC & CTCM (W4) BOARD (1／2)

DEC & CTCM (1／2) SECTION FLOWCHART


START
6-1. MACHINE CONDITION SETTING
6-2. SIGNAL SOURCE SETTING
6-3. 13.5MHz PLL ADJUSTMENT
6-4. CLAMP REFERENCE ADJUSTMENT
6-5. INPUT LEV 2 ADJUSTMENT
6-6. VIDEO A／D INPUT LEVEL ADJUSTMENT
6-7. COMPONENT INPUT Y LEVEL CONFIRMATION
6-8. LINE INPUT Y LEVEL ADJUSTMENT
6-9. Y／C INPUT Y LEVEL ADJUSTMENT
6-10. COMPONENT INPUT Pr／Pb LEVEL ADJUSTMENT
6-11. LINE INPUT Pr／Pb LEVEL ADJUSTMENT
6-12. Y／C INPUT Pr LEVEL ADJUSTMENT
END

6-1. MACHINE CONDITION SETTING

(W4 DEC & CTCM)

Set the switches on the FRONT PANEL as follows:

MODE -- EE
VIDEO INPUT SELECT -- LINE
VIDEO IN LEVEL -- FIXED POSITION

6-2. SIGNAL SOURCE SETTING

(W4 DEC & CTCM)

Confirm the output level of the signal Generator as follows:

1. COMPOSITE SIGNAL : 100% colour bar (without SET UP)
VIDEO LEVEL = 0.7Vp-p
SYNC LEVEL = 0.3Vp-p

2. COMPONENT SIGNAL : 100% colour bar (without SET UP)
Y LEVEL = 0.7Vp-p
SYNC LEVEL = 0.3Vp-p
Pb LEVEL = 0.7Vp-p
Pr LEVEL = 0.7Vp-p

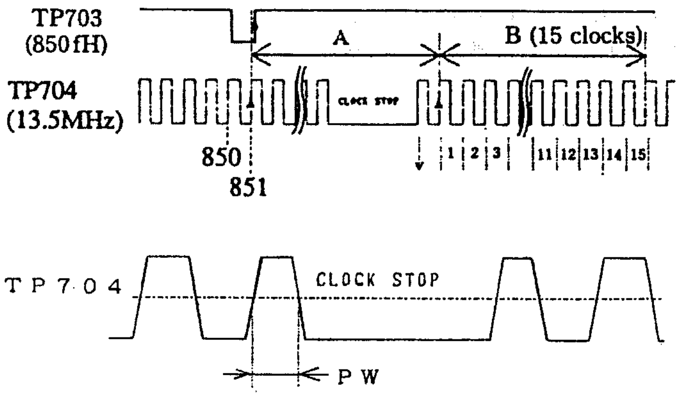
3. Y/C SIGNAL : 100% colour bar (without SET UP)
Y LEVEL = 0.7Vp-p
SYNC LEVEL = 0.3Vp-p
C LEVEL = 0.885Vp-p

6-3. 13.5MHz PLL ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP701 TP703 TP704	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPONENT 100% COLOUR BAR	VL701 (PLL OFFS) VR702 (PLL POS)

ADJUSTMENT PROCEDURE & SPECIFICATION

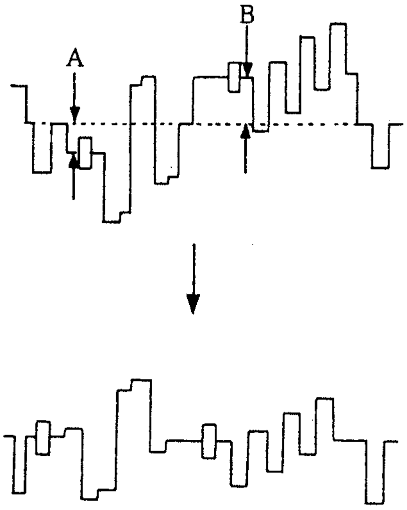
MACHINE CONDITION	1. Refer to the SECTION 6-1. 2. VIDEO INPUT SELECT : COMPONENT
Step 1. 1. SCOPE CH1 : TP703 SCOPE CH2 : TP704 2. OSCILLOSCOPE SETTING EXT TRIGGER : COMPOSITE SYNC from SIGNAL GENERATOR Delay Mode : 200ns/Div. 3. Adjust VR702 so that the "A" period and "B" period are the same timing and the "PW" period is 33 ± 3ns as shown.	 TP703 (850fH) A B (15 clocks) TP704 (13.5MHz) CLOCK STOP 850 851 1 2 3 11 12 13 14 15 TP704 CLOCK STOP PW SPECIFICATION: A : B = 100% : 100% ± 2%
Step 2. 1. SCOPE : TP701 2. Adjust VL701 so that the DC voltage of TP701 is 0V ± 0.2V.	

6-4. CLAMP REFERENCE ADJUSTMENT

(W4 DEC & CTCM)

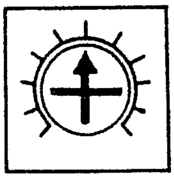
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP601	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	COMPONENT 100% COLOUR BAR	VR601 (PB CLAMP REF) VR602 (PR CLAMP REF)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 6-1. 2. VIDEO INPUT SELECT : COMPONENT
1. Adjust VR601 and VR602 so that level differences of "A" and "B" portion are minimum as shown.	

6-5. INPUT LEV 2 ADJUSTMENT

(W4 DEC & CTCM)

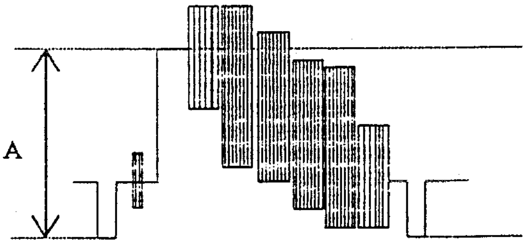
1. Preset VR219 to the 12 o'clock position.	

6-6. VIDEO A/D INPUT LEVEL ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP41	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	LINE INPUT 100% COLOUR BAR	VR1 (INPUT LEV 1)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	Refer to the SECTION 6-1.
Step 1. 1. SCOPE : TP41 2. Adjust VR1 so that the input signal level (A) is 1.4Vp-p ± 0.02Vp-p as shown.	 A = 1.4Vp-p ± 0.02Vp-p

6-7. COMPONENT INPUT Y LEVEL CONFIRMATION

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP504	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPONENT 100% COLOUR BAR	----------

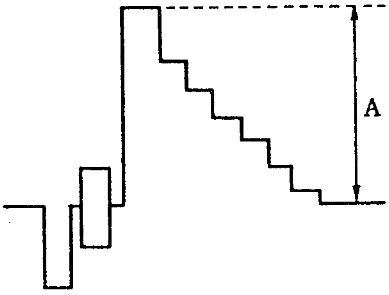
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

1. Refer to the SECTION 6-1.
2. VIDEO INPUT SELECT : COMPONENT

Step 1.

1. SCOPE : TP504
2. Confirm that the Y LEVEL is 550mVp-p ± 30mVp-p as shown.

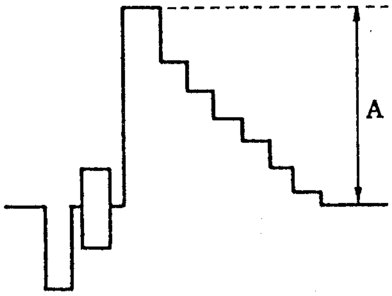


A = 550mVp-p ± 30mVp-p

6-8. LINE INPUT Y LEVEL ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP504	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	LINE INPUT 100% COLOUR BAR	VR141 (Y LEV 1)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 6-1.
Step 1. 1. SCOPE : TP504 2. Adjust VR141 so that the Y level (A) safisfies the following conditions. 1) The Y level (A) is 550mVp-p ± 30mVp-p as shown. 2) The difference between the Y level (A) of this adjustment and the Y level (A) of the COMPONENT INPUT Y LEVEL (6-7) is within±11mVp-p.	 A = 550mVp-p ± 30mVp-p

6-9. Y/C INPUT Y LEVEL ADJUSTMENT

(W4 DEC & CTCM)

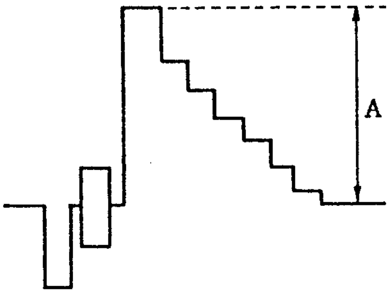
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP504	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	YC INPUT 100% COLOUR BAR	VR142 (Y LEV 2)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 6-1. 2. VIDEO INPUT SELECT : YC 3. LINE INPUT Y LEVEL ADJ. (6-8) should be completed before this adjustment is done.

Step 1.

1. SCOPE : TP504
2. Adjust VR142 so that the Y level (A) satisfies the following conditions.
   1) The Y level (A) is 550mVp-p ± 30mVp-p as shown.
   2) The difference between the Y level (A) of this adjustment and the Y level (A) of the COMPONENT INPUT Y LEVEL (6-7) is within±11mVp-p.

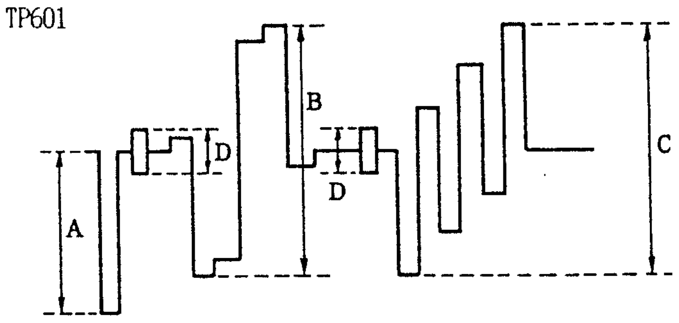


A = 550mVp-p ± 30mVp-p

6-10. COMPONENT INPUT Pr/Pb LEVEL ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP601	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPONENT 100% COLOUR BAR	VR501 (Pr LEV 2) VR502 (Pb LEV 2)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 6-1. 2. VIDEO INPUT SELECT : COMPONENT
Step 1. 1. SCOPE : TP601	 A = 650mVp-p ± 100mVp-p
Step 2. 1. Confirm that the sync level (A) is 650mVp-p ± 100mVp-p as shown. 2. Set the sync level (A) to 6.5 divisions on the oscilloscope display (uncalibrated). 3. Confirm that the B and C levels are as shown below. B = 7.0 divisions ± 0.2 divisions C = 7.0 divisions ± 0.2 divisions 4. If it is not within specification, adjust VR501 so that the Pr level (B) is 7.0 divisions ± 0.2 divisions and adjust VR502 so that the Pb level (C) is 7.0 divisions ± 0.2 divisions. 5. After this adjustment, confirm the Burst level (D) is 3.0 divisions ± 0.2 divisions.	

6-11. LINE INPUT Pr/Pb LEVEL ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP601	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	LINE INPUT 100% COLOUR BAR	VR215 (PR LEV 1) VR213 (PB LEV 1)

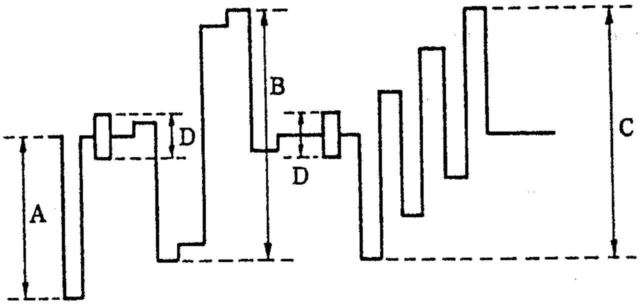
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 6-1. 2. COMPONENT INPUT Pr/Pb LEVEL ADJ. (6-10) should be completed before this adjustment is done.

Step 1.

1. SCOPE : TP601
2. Set the sync level (A) to 6.5 divisions on the oscilloscope display (uncalibrated).
3. Confirm that the B and C levels are as shown below.
   B = 7.0 divisions ± 0.2 divisions
   C = 7.0 divisions ± 0.2 divisions
4. If it is not within specification, adjust VR215 so that the Pr level (B) is 7.0 divisions ± 0.2 divisions and adjust VR213 so that the Pb level (C) is 7.0 divisions ± 0.2 divisions.

TP601

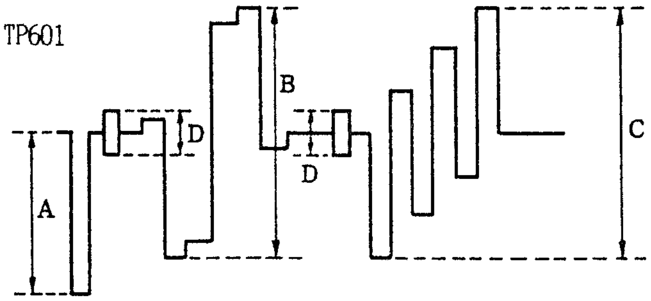


6-12. Y/C INPUT Pr LEVEL ADJUSTMENT

(W4 DEC & CTCM)

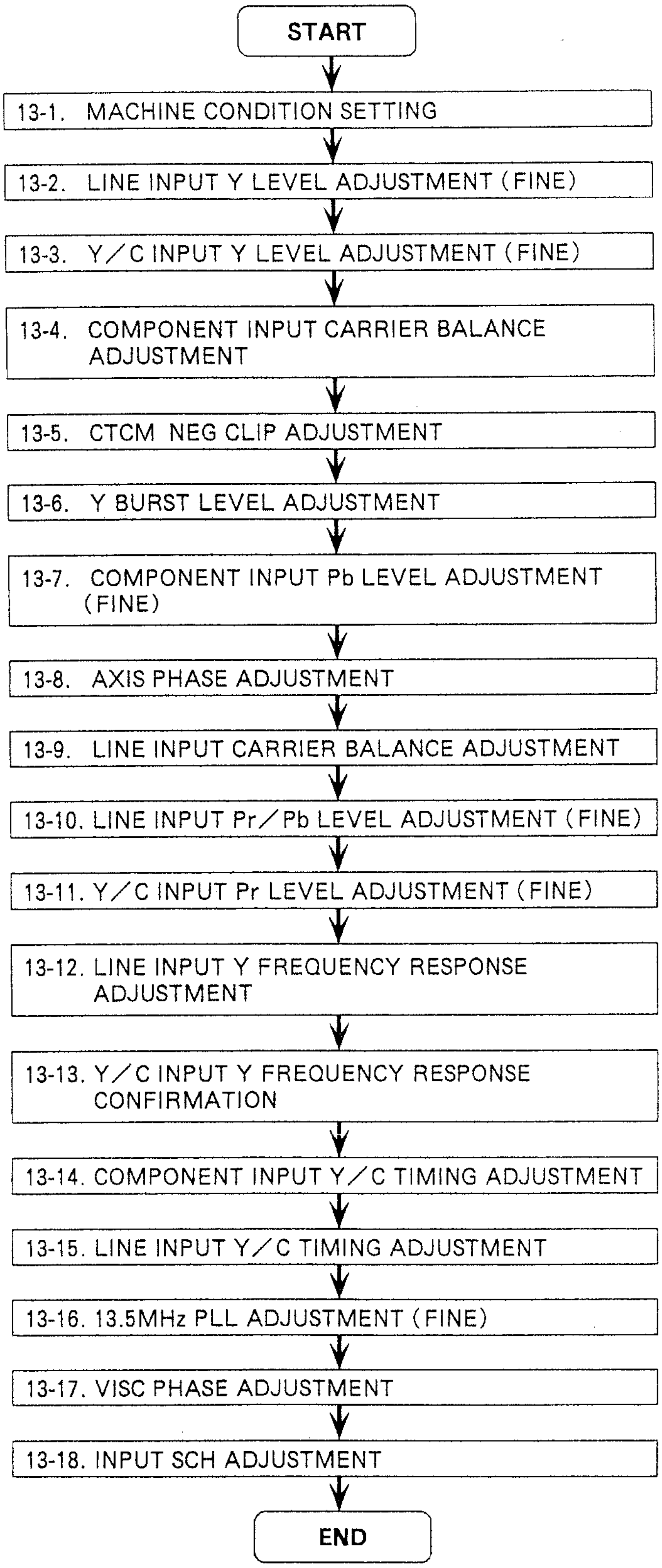
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP601	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	YC INPUT 100% COLOUR BAR	VR165 (C LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 6-1. 2. VIDEO INPUT SELECT : YC 3. The following adjustment should be completed before this adjustment is done. 1) COMPONENT INPUT Pr/Pb LEVEL ADJ. (6-10) 2) LINE INPUT Pr/Pb LEVEL ADJ. (6-11)
Step 1. 1. SCOPE : TP601 2. Set the sync level (A) to 6.5 divisions on the oscilloscope display (uncalibrated). 3. Confirm that the B level is 7.0 divisions ± 0.2 divisions. 4. If it is not within specification, adjust VR165 so that the Pr level (B) is 7.0 divisions ± 0.2 divisions.	

1 3. DEC & CTCM (W 4) BOARD (2／2)

DEC & CTCM (2／2) SECTION FLOWCHART


START
13-1. MACHINE CONDITION SETTING
13-2. LINE INPUT Y LEVEL ADJUSTMENT (FINE)
13-3. Y／C INPUT Y LEVEL ADJUSTMENT (FINE)
13-4. COMPONENT INPUT CARRIER BALANCE ADJUSTMENT
13-5. CTCM NEG CLIP ADJUSTMENT
13-6. Y BURST LEVEL ADJUSTMENT
13-7. COMPONENT INPUT Pb LEVEL ADJUSTMENT (FINE)
13-8. AXIS PHASE ADJUSTMENT
13-9. LINE INPUT CARRIER BALANCE ADJUSTMENT
13-10. LINE INPUT Pr／Pb LEVEL ADJUSTMENT (FINE)
13-11. Y／C INPUT Pr LEVEL ADJUSTMENT (FINE)
13-12. LINE INPUT Y FREQUENCY RESPONSE ADJUSTMENT
13-13. Y／C INPUT Y FREQUENCY RESPONSE CONFIRMATION
13-14. COMPONENT INPUT Y／C TIMING ADJUSTMENT
13-15. LINE INPUT Y／C TIMING ADJUSTMENT
13-16. 13.5MHz PLL ADJUSTMENT (FINE)
13-17. VISC PHASE ADJUSTMENT
13-18. INPUT SCH ADJUSTMENT
END

13-1. MACHINE CONDITION SETTING

(W4 DEC & CTCM)

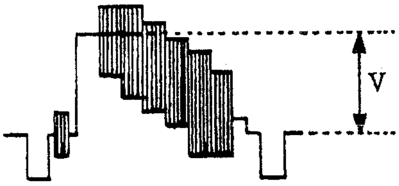
Set the switches on the Front Panel of follows:

MODE ———————— EE
VIDEO INPUT SELECT ———————— LINE
VIDEO IN LEVEL ———————— FIXED POSITION

13-2. LINE INPUT Y LEVEL ADJUSTMENT (FINE)

(W4 DEC & CTCM)

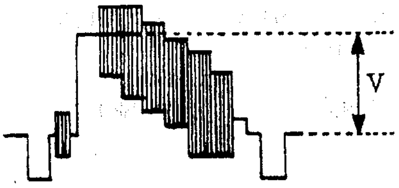
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (AU-W35H) VIDEO 2 OUT (AU-66H/65H) (W/75ohm Termination)	E-E (EJECT)	————	WAVEFORM MONITOR	LINE INPUT 100% COLOUR BAR	VR141 (Y LEV 1)

Step 1. MACHINE CONDITION	1. Refer to the SECTION 13-1.
Step 2. 1. Adjust VR141 so that the Y level (V) is 0.7 ± 0.016Vp-p as shown.	 V = 0.7 ± 0.016Vp-p

13-3. Y/C INPUT Y LEVEL ADJUSTMENT (FINE)

(W4 DEC & CTCM)

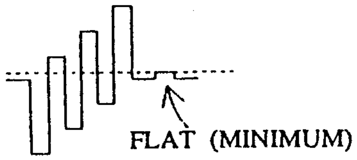
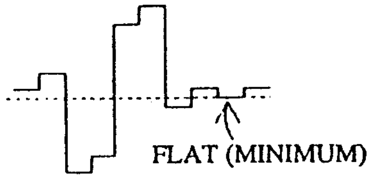
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (AU-W35H) VIDEO 2 OUT (AU-66H/65H) (W/75ohm Termination)	E-E (EJECT)	------	WAVEFORM MONITOR	YC INPUT 100% COLOUR BAR	VR142 (Y LEV 2)

Step 1. MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. VIDEO INPUT SELECT : YC
Step 2. 1. Adjust VR142 so that the Y level (V) is 0.7 ± 0.016Vp-p as shown.	 V = 0.7 ± 0.016Vp-p

13-4. COMPONENT INPUT CARRIER BALANCE ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPONENT 100% COLOUR BAR	VR601 (PB CLAMP REF) VR602 (PR CLAMP REF)

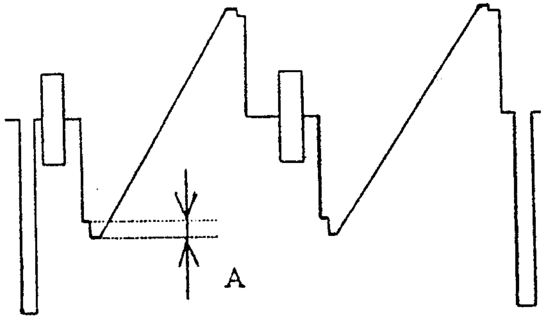
ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. VIDEO INPUT SELECT : COMPONENT
Step 1. 1. SCOPE : COMPONENT Pb OUT 2. Adjust VR601 so that the burst portion of Pb signal is "flat" as shown.	
Step 2. 1. SCOPE : COMPONENT Pr OUT 2. Adjust VR602 so that the burst portion of Pr signal is "flat" as shown.	

13-5. CTCM NEG CLIP ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP601	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPONENT RAMP (OVERSIZE)	VR503 (NEG CLIP)

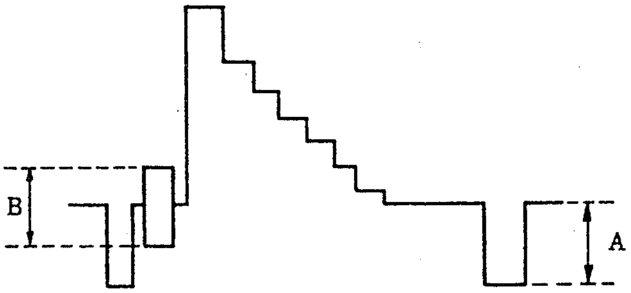
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. VIDEO INPUT SELECT : COMPONENT
1. Adjust VR503 so that the A portion is 60mVp-p ± 5mVp-p as shown.	 A = 60mVp-p ± 5mVp-p

13-6. Y BURST LEVEL ADJUSTMENT

(W4 DEC & CTCM)

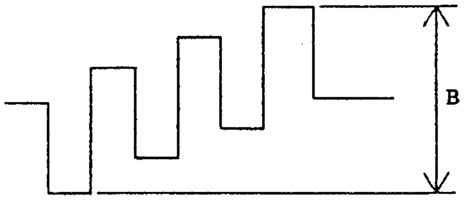
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP504	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPONENT 100% COLOUR BAR	VR906 (Y BU LEV)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. VIDEO INPUT SELECT : COMPONENT
Step 1. 1. SCOPE : TP504 2. Set the sync level (A) to 3.0 divisions on the oscilloscope display (uncalibrated).	 A = 3.0 DIVISIONS B = 3.0 ± 0.1 DIVISIONS
Step 2. 1. Adjust the Burst level (B) is 3.0 ± 0.1 divisions against the sync level (A) as shown.	

13-7. COMPONENT INPUT Pb LEVEL ADJUSTMENT (FINE)

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb OUT (W/75ohm Termination)	E-E (EJECT)	------	OSCILLOSCOPE	COMPONENT 100% COLOUR BAR	VR502 (Pb LEV 2)

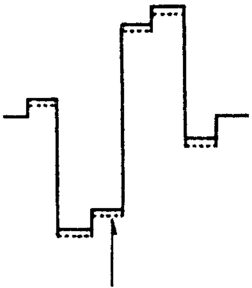
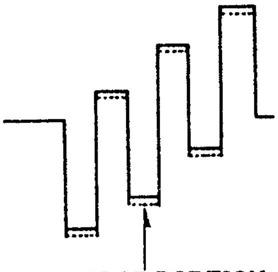
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. VIDEO INPUT SELECT : COMPONENT
Step 1. 1. Adjust VR502 so that the Pb level (B) is 0.7 ± 0.016Vp-p as shown.	

13-8. AXIS PHASE ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT (W/75ohm Termination)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	LINE IN 100% COLOUR BAR	VR218 (AXIS 1) VC401 (AXIS 2)

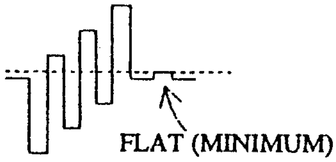
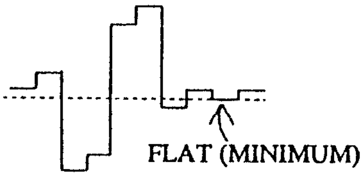
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION	1. Refer to the SECTION 13-1.
Step 1. 1. SCOPE : COMPONENT Pr OUT 2. Adjust VR218 so that the overlap portion of waveform becomes minimum as a whole.	 OVERLAP PORTION
Step 2. 1. SCOPE : COMPONENT Pb OUT 2. Adjust VC401 so that the overlap portion of waveform becomes minimum as a whole.	 OVERLAP PORTION

13-9. LINE INPUT CARRIER BALANCE ADJUSTMENT

(W4 DEC & CTCM)

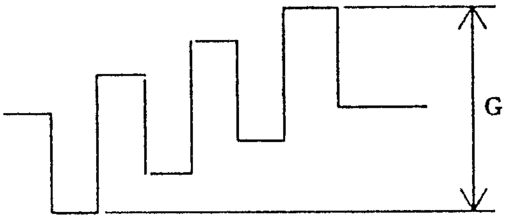
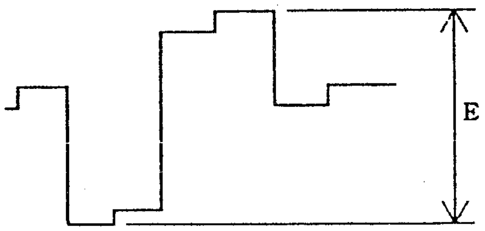
TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT	E-E (EJECT)	☐ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	LINE IN 100% COLOUR BAR	VR216 (PB BLK DC) VR217 (PR BLK DC)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. The following adjustments should be completed before this adjustment is done. 1) CARRIER LEAKAGE ADJ. (9-16) 2) COMPONENT INPUT CARRIER BALANCE ADJ. (13-4)
Step 1. 1. SCOPE : COMPONENT Pb OUT 2. Adjust VR216 so that the burst portion of Pb signal is"flat" as shown.	(Pb OUT) 
Step 2. 1. SCOPE : COMPONENT Pr OUT 2. Adjust VR217 so that the burst portion of Pr signal is "flat" as shown.	(Pr OUT) 

13-10. LINE INPUT Pr/Pb LEVEL ADJUSTMENT (FINE)

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pb/Pr OUT (W/75ohm Termination)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	LINE INPUT 100% COLOUR BAR	VR213 (PB LEV 1) VR215 (PR LEV 1)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. The following adjustments should be completed before this adjustment is done. 1) COMPONENT Pb LEVEL ADJ. (9-9) 2) COMPONENT Pr LEVEL ADJ. (9-11) 3) COMPONENT INPUT Pb LEVEL ADJ. (13-7)
Step 1. 1. SCOPE : COMPONENT Pb OUT 2. Adjust VR213 so that the Pb level (G) is 0.7 ± 0.016Vp-p as shown.	 G = 0.7 ± 0.016Vp-p
Step 2. 1. SCOPE : COMPONENT Pr OUT 2. Adjust VR215 so that the Pr level (E) is 0.7 ± 0.016Vp-p as shown.	 E = 0.7 ± 0.016Vp-p

13-11. Y/C INPUT Pr LEVEL ADJUSTMENT (FINE)

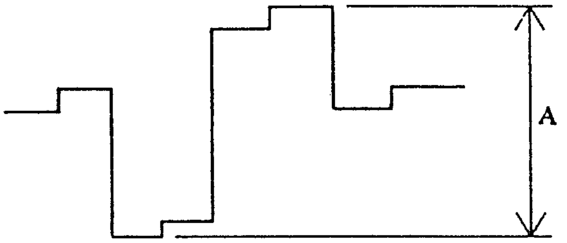
(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Pr OUT (W/75ohm Termination)	E-E (EJECT)	———	OSCILLOSCOPE	YC IN 100% COLOUR BAR	VR165 (C LEV)

MACHINE CONDITION	
	1. Refer to the SECTION 13-1. 2. VIDEO INPUT SELECT : YC

Step 1.

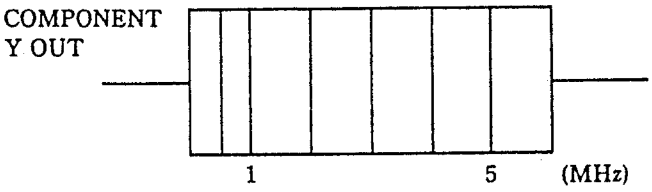
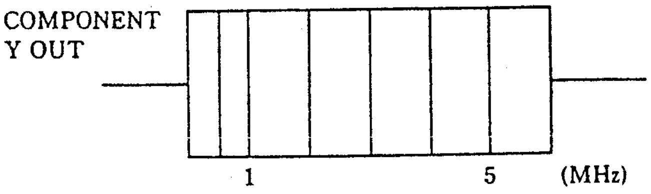
1. Adjust VR165 so that the Pr level (A) is 0.7 ± 0.016Vp-p as shown.



13-12. LINE INPUT Y FREQUENCY RESPONSE ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination)	E-E (EJECT)	BLANK ☐ TAPE	OSCILLOSCOPE OR WAVEFORM MONITOR	Step 1. COMPONENT 60% H.SWEEP (NO BURST)	VC141 (Y FREQ)
		ALIGNMENT ☐ TAPE		Step 2. LINE IN 60% H.SWEEP (NO BURST)	

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. The following adjustments should be completed before this adjustment is done. 1) Y PLAYBACK FREQUENCY RESPONSE ADJ. (7-39) 2) Y OUTPUT FREQUENCY RESPONSE ADJ. (9-24)
Step 1. 1. INPUT POINT : COMPONENT IN 2. VIDEO INPUT SELECT : COMPONENT 3. Check the frequency response 0.5MHz : 5MHz (0.5MHz = 100% : Reference) and notate it.	 0.5MHz = 100% (Reference) 5.0MHz = A%
Step 2. 1. INPUT POINT : LINE IN 2. VIDEO INPUT SELECT : LINE 3. Adjust VC141 so that the frequency response is as shown.	 0.5MHz = 100% (Reference) 5.0MHz = A% ± 2% Note : A is the frequency response at 5.0MHz of the COMPONENT input.

13-13. YC INPUT Y FREQUENCY RESPONSE CONFIRMATION

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT (W/75ohm Termination)	E-E (EJECT)	☐ BLANK TAPE	OSCILLOSCOPE OR WAVEFORM MONITOR	Step 1. COMPONENT 60% H.SWEEP (NO BURST)	------
		☐ ALIGNMENT TAPE		Step 2. YC IN 60% H.SWEEP (NO BURST)	

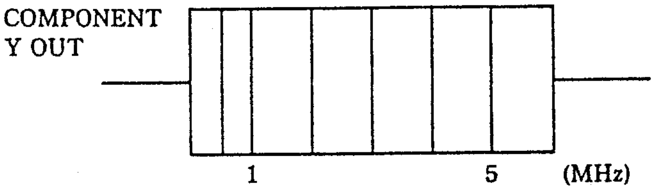
ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

1. Refer to the SECTION 13-1.
2. The following adjustments should be completed before this CONFIRMATION is done.
   1) Y PLAYBACK FREQUENCY RESPONSE ADJ. (7-39)
   2) Y OUTPUT FREQUENCY RESPONSE ADJ. (9-24)
   3) LINE INPUT Y FREQUENCY RESPONSE ADJ. (13-12)

Step 1.

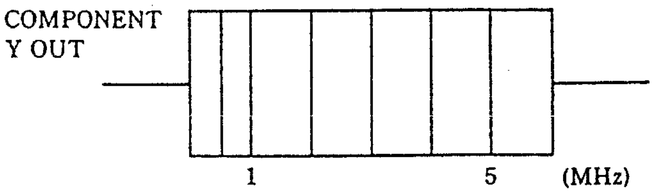
1. INPUT POINT : COMPONENT IN
2. VIDEO INPUT SELECT : COMPONENT
3. Check the frequency response 0.5MHz : 5MHz (0.5MHz = 100% : Reference) and notate it.



0.5MHz = 100% (Reference)
5.0MHz = A%

Step 2.

1. INPUT POINT : YC IN
2. VIDEO INPUT SELECT : YC
3. Confirm that the frequency response is as shown.



0.5MHz = 100% (Reference)
5.0MHz = A% +5/-10%

Note : A is the frequency response at 5.0MHz of the COMPONENT input.

13-14(A). COMPONENT INPUT Y/C TIMING ADJUSTMENT (BY USING WAVEFORM MONITOR)

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pb OUT Pr OUT	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	WAVEFORM MONITOR	COMPONENT PULSE & BAR (MOD. 20T)	VC501 (PR TMG 2) VC502 (PB TMG 2)

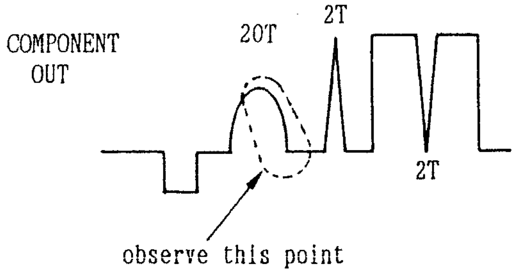
ADJUSTMENT PROCEDURE & SPECIFICATION

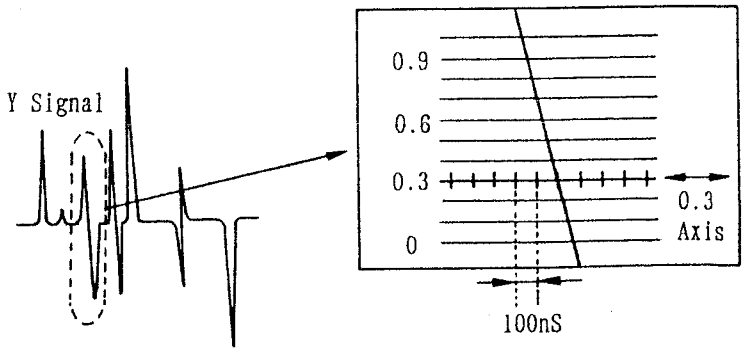
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. VIDEO INPUT SELECT : COMPONENT 3. COMPONENT Y/C TIMING ADJ. (9-18) should be completed before this adjustment is done.
Step 1. 1. WAVEFORM MONITOR CONDITION	RESPONSE : DIFFD STEP mode VOLTS FULL SCALE : MAX (UNCAL) DISPLAY : × 1 (5) MAGNIFIER : ×50 (0.1) TRIGGER : VIDEO OUT OF VTR

Step 2.

Note:
The COMPONENT OUTPUT CABLE LENGTH should be all the same length.

1. Make a recording, then playback the just recorded portion.
2. WFM MONITOR
   CHA : COMPONENT Y OUT
   CHB : COMPONENT Pr OUT
   EXT SYNC CH1 : VIDEO OUT
   CH2 : VIDEO OUT
3. Observe the falling portion of the modulated 20T pulse signal.
4. Adjust the vertical and horizontal position of the WFM Monitor so that the centre line of falling edge is set to 0.3 axis as shown.
5. Change the Input Select of the WFM Switch from the Ach (COMPONENT Y OUT) to the Bch (COMPONENT Pr OUT).
6. Measure the difference between the Y and Pr signal timing.
7. If it is not within ± 20ns, adjust VC501.
8. WFM MONITOR
   CHA : COMPONENT Y OUT
   CHB : COMPONENT Pb OUT
9. Measure the difference between the Y and Pb signal timing.
10. If it is not within±20ns, adjust VC502 and repeat #1 thru #10 of Step 2.





SPECIFICATION : Y/C TIMING = ± 20ns

13-14(B). COMPONENT INPUT Y/C TIMING ADJUSTMENT (BY USING OSCILLOSCOPE)

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pb OUT Pr OUT	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	OSCILLOSCOPE	COMPONENT 100% COLOUR BAR	VC501 (PR TMG 2) VC502 (PB TMG 2)

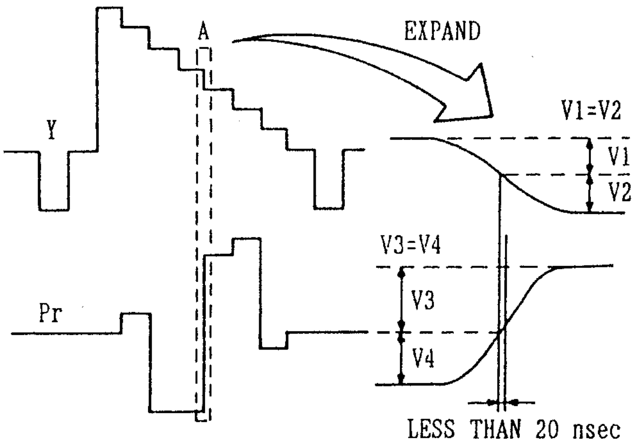
ADJUSTMENT PROCEDURE & SPECIFICATION

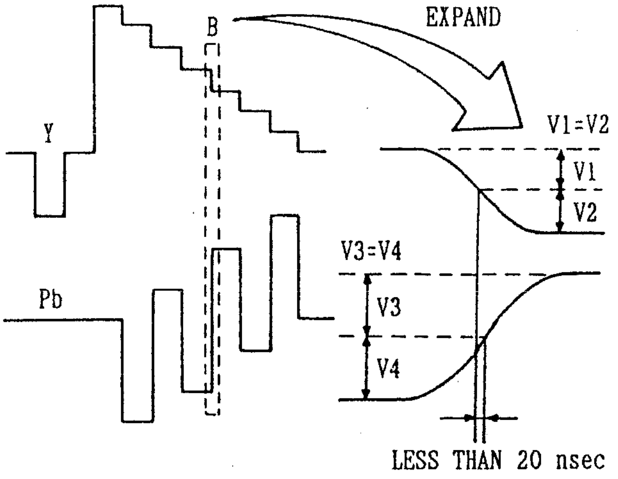
MACHINE CONDITION	
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. VIDEO INPUT SELECT : COMPONENT 3. COMPONENT Y/C TIMING ADJ. (9-18) should be completed before this adjustment is done.

Step 1.

Note:
COMPONENT OUTPUT CABLE LENGTH should be the same length.

1. Make a recording, then playback the just recorded portion.
2. SCOPE CH1 : COMPONENT Y OUT
   SCOPE CH2 : COMPONENT Pr OUT
3. Confirm that the Y/Pr Timing of "A" portion is less than 20ns as shown.
4. If it is not within specification, adjust VC501 so that the Y/Pr Timing of "A" portion is less than 20ns.
5. SCOPE CH1 : COMPONENT Y OUT
   SCOPE CH2 : COMPONENT Pb OUT
6. Confirm that the Y/Pb Timing of "B" portion is less than 20ns as shown.
7. If it is not within specification, adjust VC502 so that the Y/Pb Timing of "B" portion is less than 20ns and repeat #1 thru #7.





13-15(A). LINE INPUT Y/C TIMING ADJUSTMENT (BY USING WAVEFORM MONITOR)

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pb OUT Pr OUT	SELF REC/PB	BLANK ■ TAPE ALIGNMENT ☐ TAPE	WAVEFORM MONITOR	LINE IN PULSE & BAR (MOD. 20T)	VR214 (PR TMG 1) VR212 (PB TMG 1)

ADJUSTMENT PROCEDURE & SPECIFICATION

MACHINE CONDITION

1. Refer to the SECTION 13-1.
2. The following adjustments should be completed before this adjustment is done.
   1) COMPOSITE Y/C TIMING ADJ. (9-19)
   2) COMPONENT INPUT Y/C TIMING ADJ. (13-14)

Step 1.

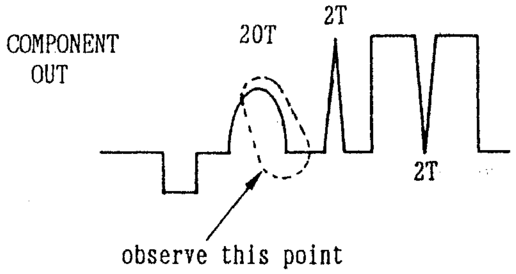
1. WAVEFORM MONITOR CONDITION

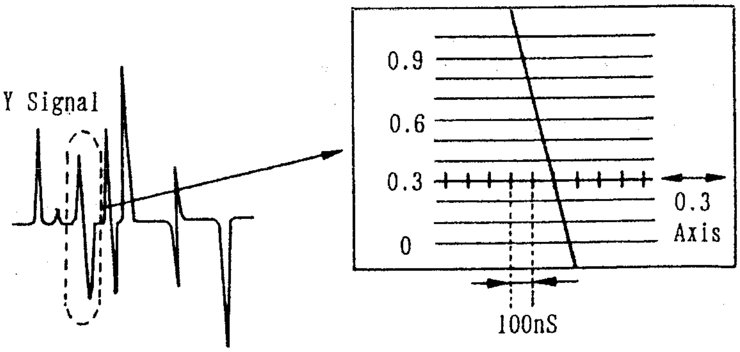
RESPONSE : DIFFD STEP mode
VOLTS FULL SCALE : MAX (UNCAL)
DISPLAY : × 1 (5)
MAGNIFIER : ×50 (0.1)
TRIGGER : VIDEO OUT OF VTR

Step 2.

Note:
COMPONENT OUTPUT CABLE LENGTH should be the same length.

1. Make a recording, then playback the just recorded portion.
2. WFM MONITOR
   CHA : COMPONENT Y OUT
   CHB : COMPONENT Pr (Pb) OUT
   EXT SYNC CH A : VIDEO OUT
   CH B : VIDEO OUT
3. Observe the falling portion of the modulated 20T pulse signal.
4. Adjust the vertical and horizontal position of WFM Monitor so that the centre line of the falling edge is set to 0.3 axis as shown.
5. Change the Input Select of WFM Switch from the Ach (COMPONENT Y OUT) to the Bch (COMPONENT Pr (Pb) OUT).
6. Measure the difference between the Y and Pr (Pb) signal timing.
7. If it is not within ± 20ns, adjust VR214 (Pr) and VR212 (Pb) and repeat #1 thru #7 of Step 2.





13-15(B). LINE INPUT Y/C TIMING ADJUSTMENT (BY USING OSCILLOSCOPE)

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
COMPONENT Y OUT Pb OUT Pr OUT	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	OSCILLOSCOPE	LINE IN COLOUR BAR	VR214 (PR TMG 1) VR212 (PB TMG 1)

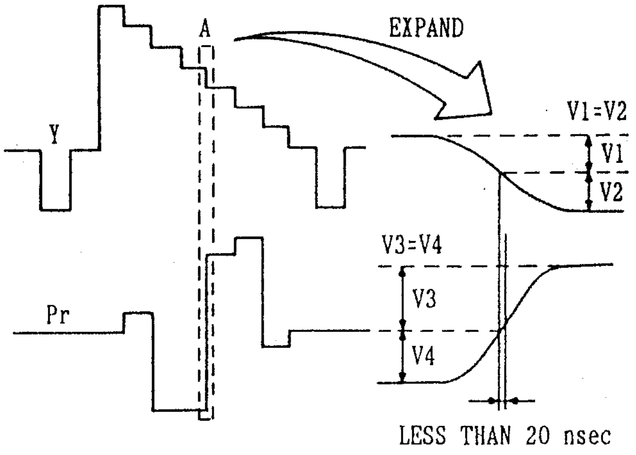
ADJUSTMENT PROCEDURE & SPECIFICATION

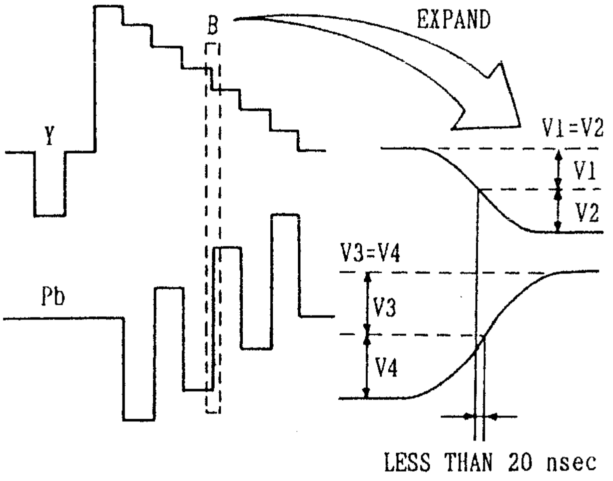
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. The following adjustments should be completed before this adjustment is done. 1) COMPOSITE Y/C TIMING ADJ. (9-19) 2) COMPONENT INPUT Y/C TIMING ADJ. (13-14)

Step 1.

Note:
COMPONENT OUTPUT CABLE LENGTH should be the same length.

1. Make a recording for a few minutes.
2. Playback the just recorded portion.
3. SCOPE CH1 : COMPONENT Y OUT
   SCOPE CH2 : COMPONENT Pr OUT
4. Confirm that the Y/Pr Timing of the "A" portion is less than 20ns as shown.
5. If it is not within specification, adjust VR214 (Pr) so that the Y/Pr Timing of the "A" portion is less than 20ns.
6. SCOPE CH1 : COMPONENT Y OUT
   SCOPE CH2 : COMPONENT Pb OUT
7. Confirm that the Y/Pb Timing of the "B" portion is less than 20ns as shown.
8. If it is not within specification, adjust VR212 (Pb) so that the Y/Pb Timing of "B" portion is less than 20ns and repeat #1 thru #8.

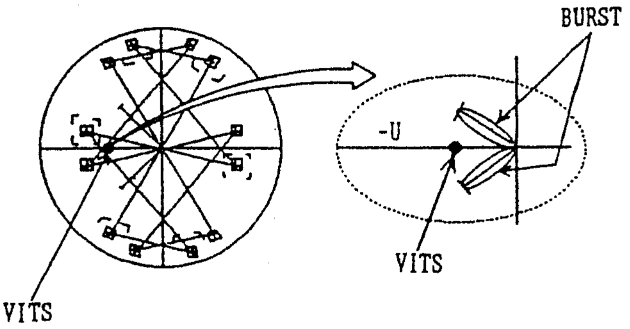




13-16. 13.5MHz PLL ADJUSTMENT (FINE)

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (AU-W35H) (W/75ohm Termination) VIDEO 2 OUT (AU-66H/65H) (W/75ohm Termination)	SELF REC/PB	■ BLANK TAPE ☐ ALIGNMENT TAPE	VECTORSCOPE	LINE IN 100% COLOUR BAR WITH VITS SIGNAL	VR701 (SYNC ϕ)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 13-1.
Step 1. 1. Place the unit in the record mode. 2. Then playback the just recorded portion. 3. Confirm that the VITS signal phase is the same as the-U axis as shown (0° ± 2°). 4. If it is not within specification, fine adjust VR701 so that the phase difference is 0° ± 2°.	 SPECIFICATION : Phase difference = 0° ± 2° (degrees)

13-17. VISC PHASE ADJUSTMENT

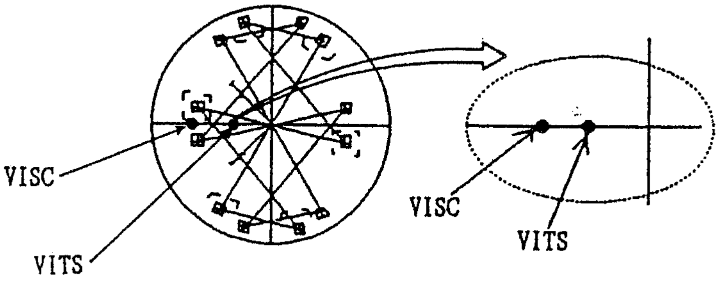
(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
VIDEO 1 OUT (AU-W35H) (W/75ohm Termination) VIDEO 2 OUT (AU-66H/65H) (W/75ohm Termination)	E-E (EJECT)	BLANK ☐ TAPE ALIGNMENT ☐ TAPE	VECTORSCOPE	LINE IN 100% COLOUR BAR WITH VITS SIGNAL	VR81 (VISC PHA)

ADJUSTMENT PROCEDURE & SPECIFICATION	
MACHINE CONDITION	1. Refer to the SECTION 13-1. 2. STD/NSTD SELECT : STD (Set-up Menu No.1011 → 00 Front Switch)

Step 1.

1. SW7 (on W1) : OFF
2. Confirm that the phase of the VISC signal and the VITS signal are equal.
3. If it is not within specification, adjust VR81 so that the phase of the VISC signal and the VITS signal are the same.
4. After this adjustment, set SW7 (on W1) to the "ON" position.



SPECIFICATION:
PHASE DIFFERENCE = 0° ± 2° (degrees)

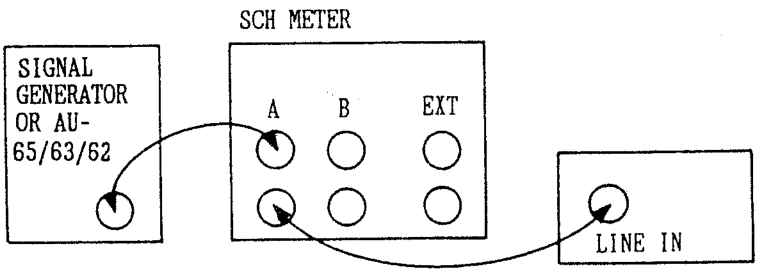
13-18. INPUT SCH ADJUSTMENT

(W4 DEC & CTCM)

TEST POINT	MODE	TAPE USED	M.EQ.	INPUT SIGNAL	ADJUSTMENT
TP401 TP402	E-E (EJECT)	- - - - - -	SCH METER OSCILLOSCOPE	LINE IN COMPOSITE SIGNAL (SCH 0°)	VR401 (SCH -)

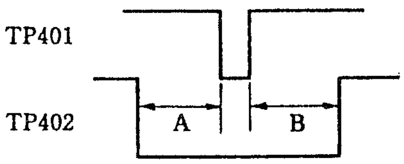
Step 1.

CONNECTION METHOD


SCH METER
SIGNAL GENERATOR OR AU-65/63/62
A
B
EXT
LINE IN

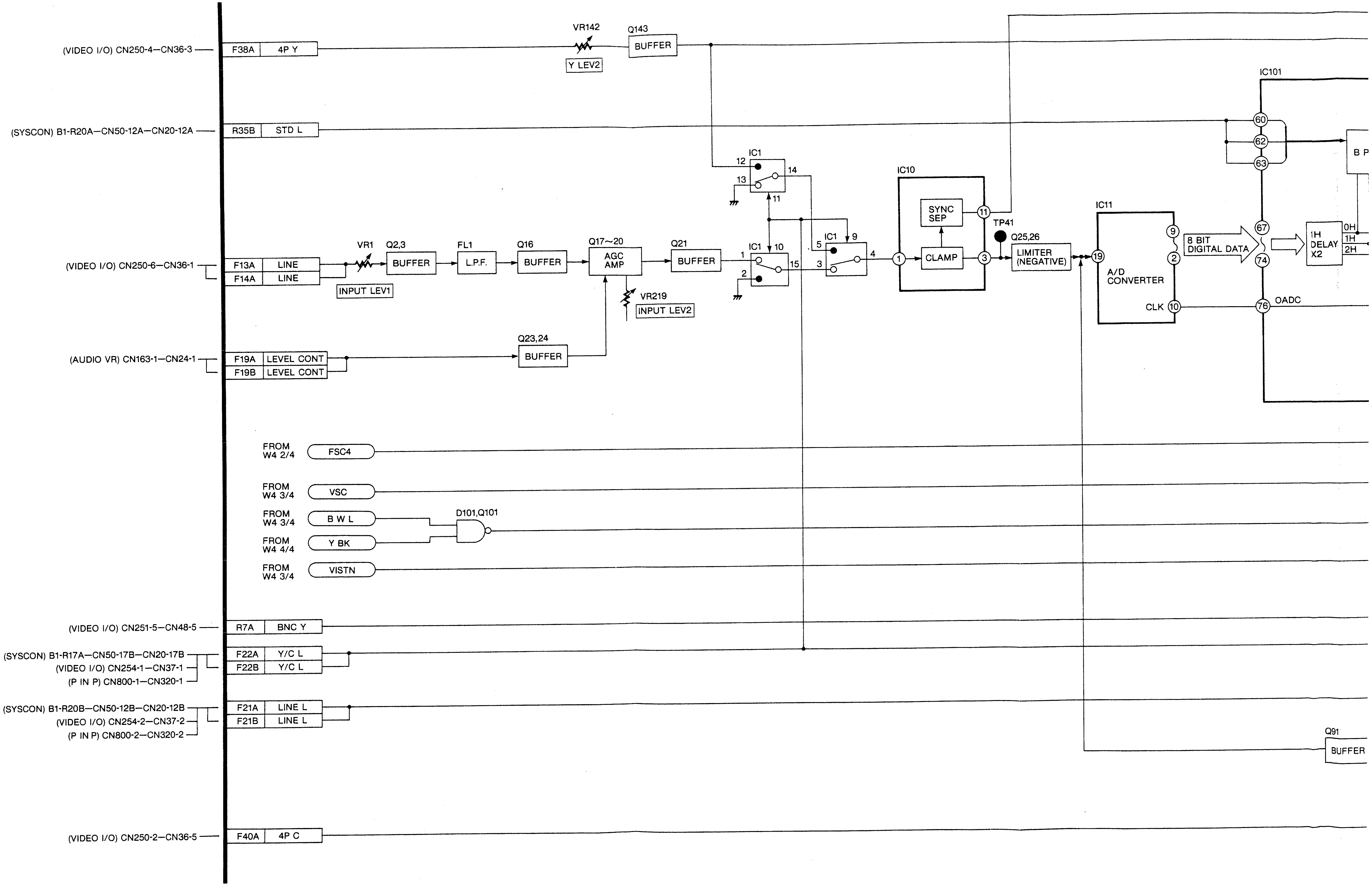
Step 2.

1. SCH METER : SCH MODE
2. Adjust SIGNAL GEN or another MII VTR so that the SCH phase becomes ± 0° .
3. Connect the oscilloscope to TP401 and TP402.
4. Adjust VR401 so that the (A) equal (B) as shown in figure.

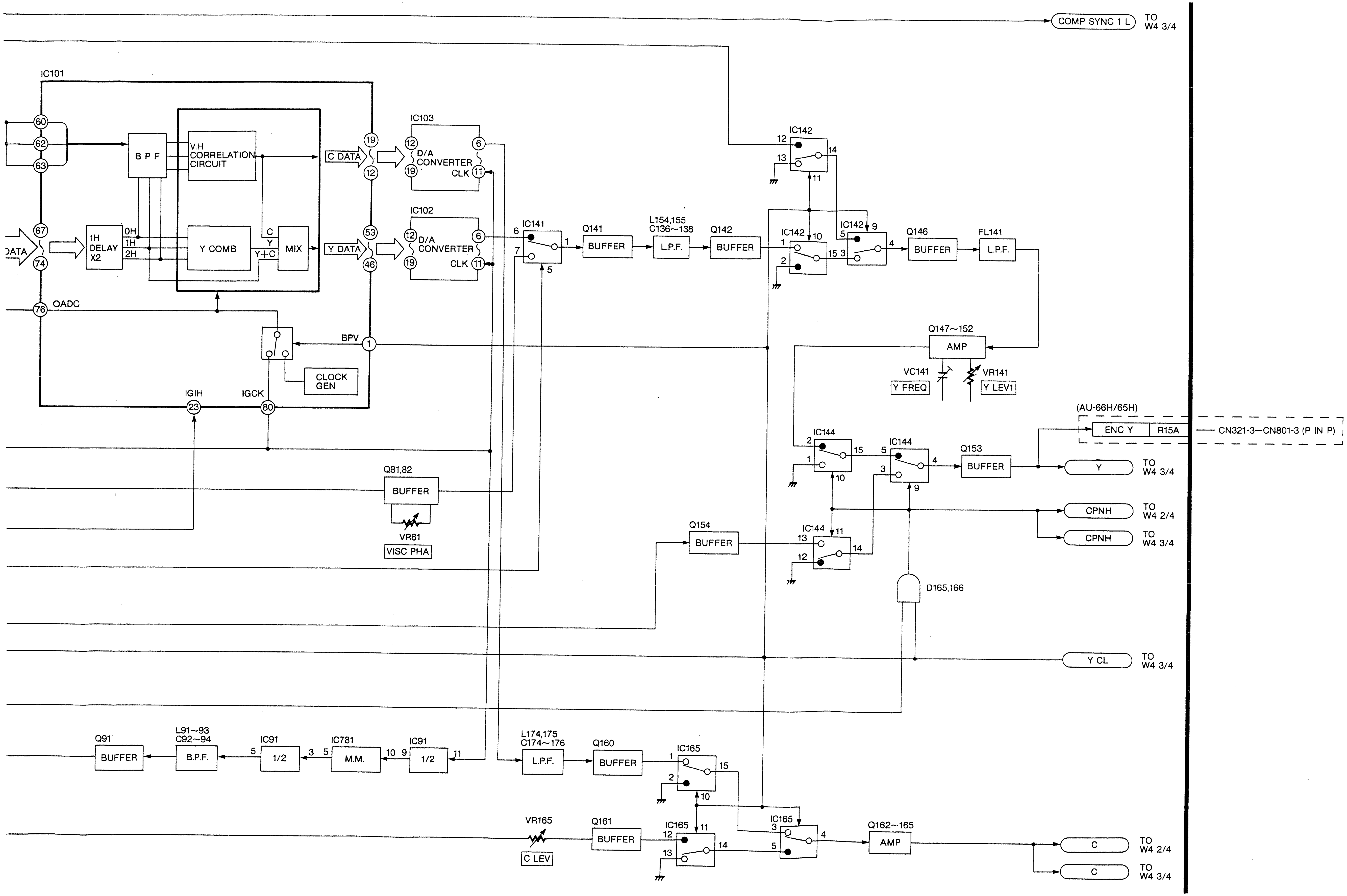

TP401
TP402
A
B

A = B ± 0.5 msec

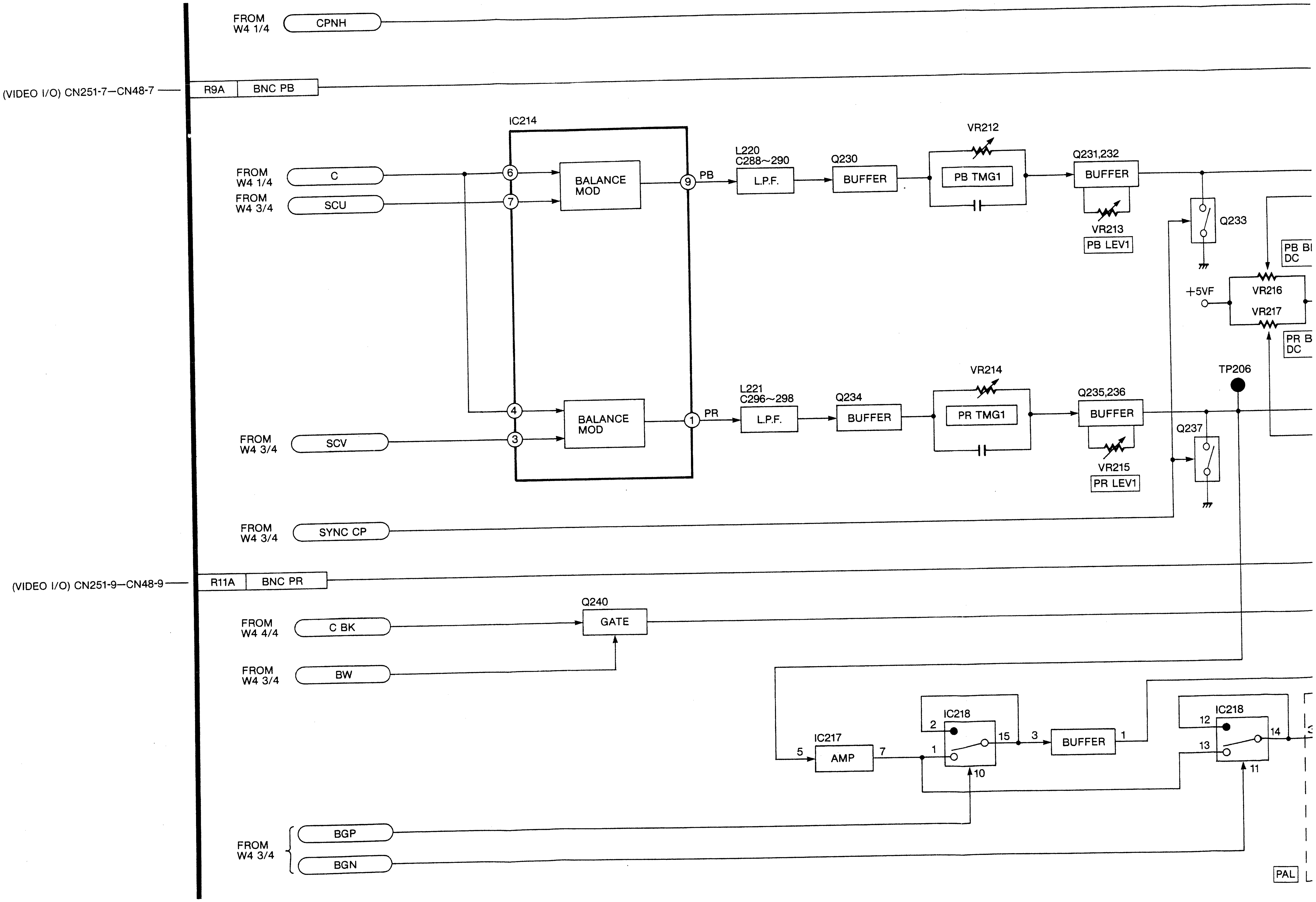
W4 (DEC & CTCM) BLOCK DIAGRAM (1/4)

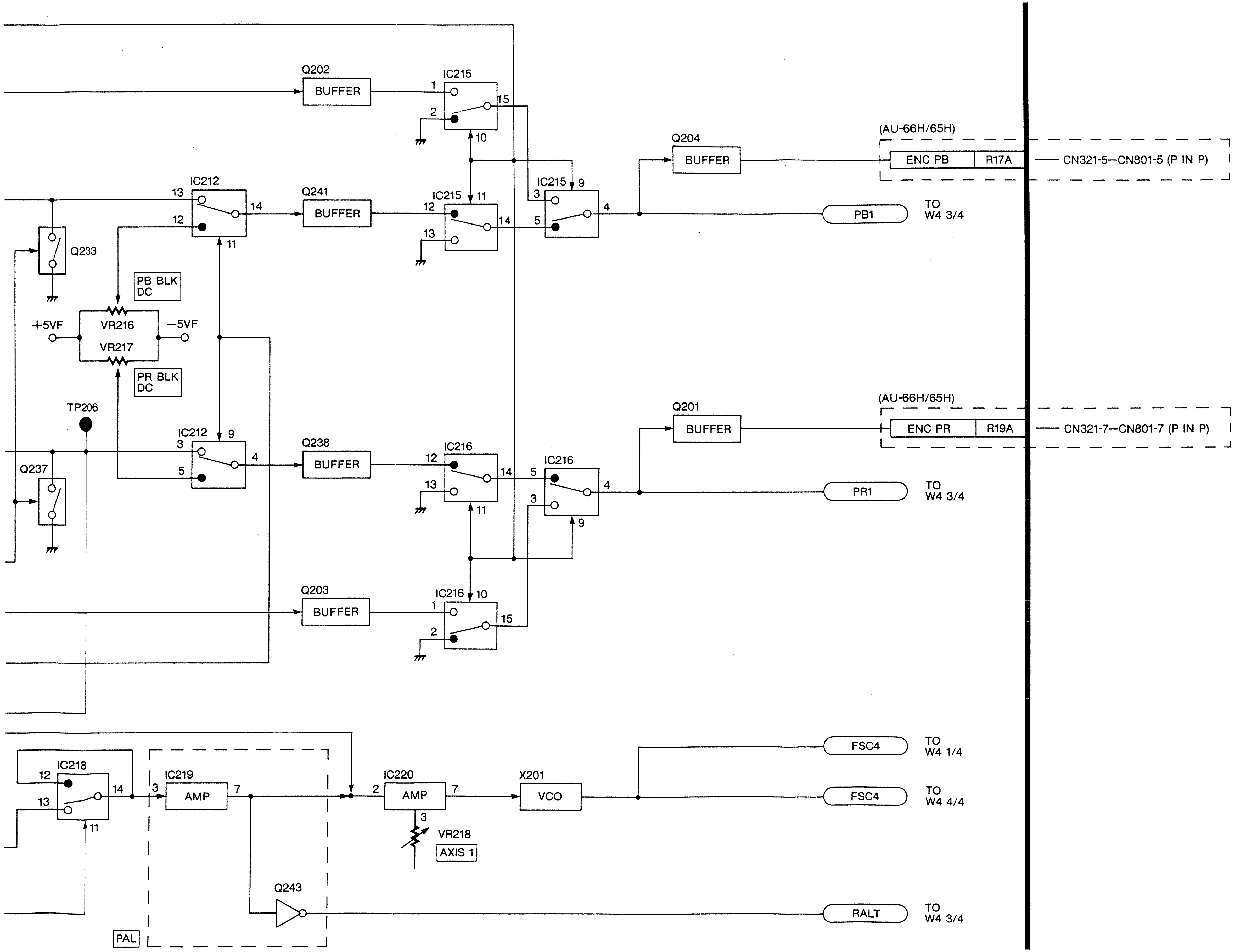


(VIDEO I/O) CN250-4—CN36-3
F38A
4P Y
VR142
Y LEV2
Q143
BUFFER
(SYSCON) B1-R20A—CN50-12A—CN20-12A
R35B
STD L
IC101
60
62
63
B P
IC1
12
13
14
11
IC10
SYNC SEP
11
TP41
Q25,26
IC11
67
1H DELAY X2
0H
1H
2H
(VIDEO I/O) CN250-6—CN36-1
F13A
LINE
F14A
LINE
VR1
INPUT LEV1
Q2,3
BUFFER
FL1
L.P.F.
Q16
BUFFER
Q17~20
AGC AMP
VR219
INPUT LEV2
Q21
BUFFER
IC1
10
1
2
15
IC1
9
5
3
4
1
CLAMP
3
LIMITER (NEGATIVE)
19
A/D CONVERTER
9
2
8 BIT DIGITAL DATA
74
CLK
10
76
OADC
(AUDIO VR) CN163-1—CN24-1
F19A
LEVEL CONT
F19B
LEVEL CONT
Q23,24
BUFFER
FROM W4 2/4
FSC4
FROM W4 3/4
VSC
FROM W4 3/4
B W L
D101,Q101
FROM W4 4/4
Y BK
FROM W4 3/4
VISTN
(VIDEO I/O) CN251-5—CN48-5
R7A
BNC Y
(SYSCON) B1-R17A—CN50-17B—CN20-17B
(VIDEO I/O) CN254-1—CN37-1
(P IN P) CN800-1—CN320-1
F22A
Y/C L
F22B
Y/C L
(SYSCON) B1-R20B—CN50-12B—CN20-12B
(VIDEO I/O) CN254-2—CN37-2
(P IN P) CN800-2—CN320-2
F21A
LINE L
F21B
LINE L
Q91
BUFFER
(VIDEO I/O) CN250-2—CN36-5
F40A
4P C

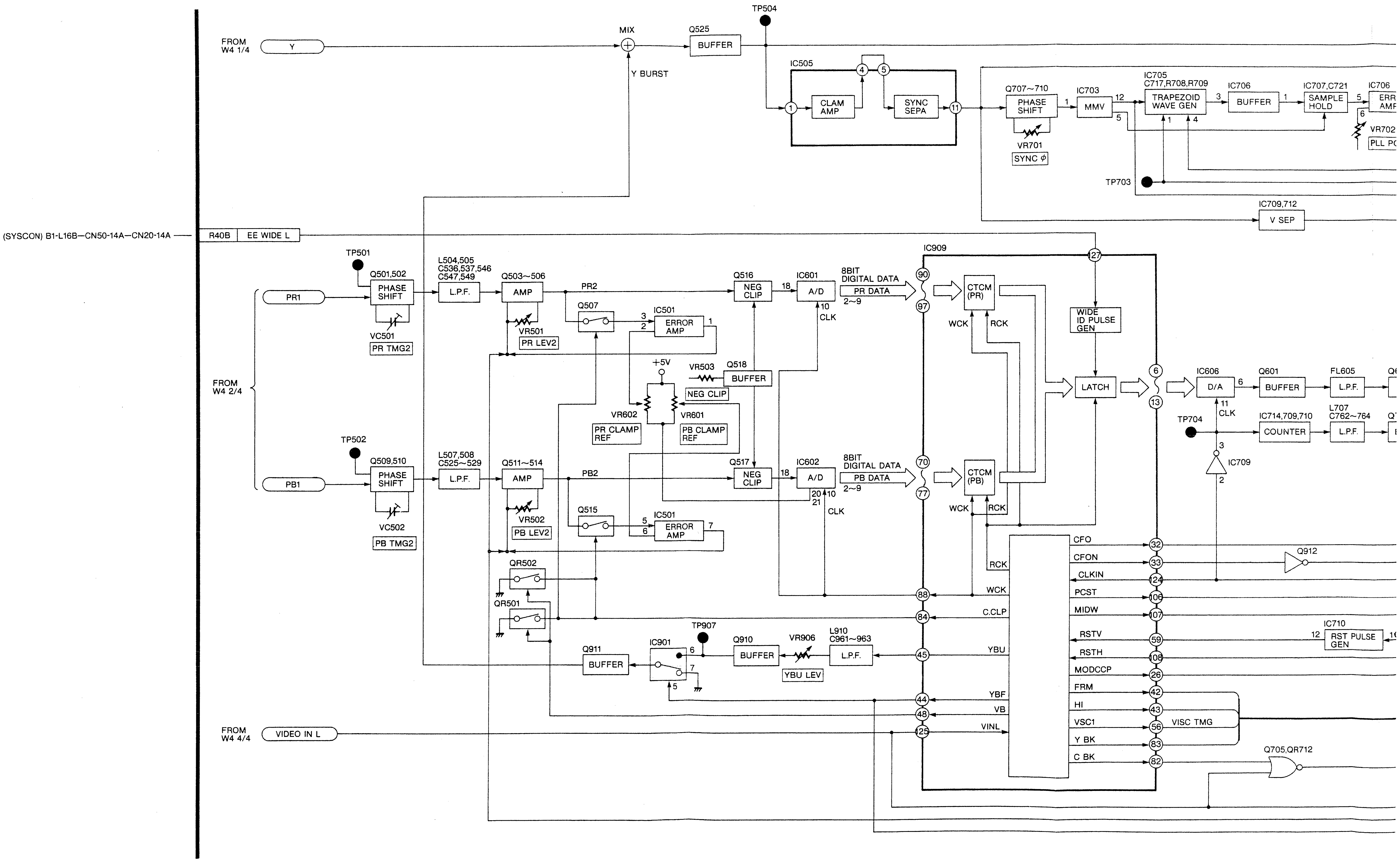

COMP SYNC 1 L
TO W4 3/4
IC101
60
62
63
67
74
76
OADC
B P F
V.H CORRELATION CIRCUIT
1H DELAY X2
0H
1H
2H
Y COMB
C
Y
Y+C
MIX
DATA
C DATA
Y DATA
19
12
53
46
1
BPV
CLOCK GEN
IGIH
IGCK
23
80
IC103
IC102
D/A CONVERTER
CLK
6
11
IC141
Q141
BUFFER
L154,155
C136~138
L.P.F.
Q142
BUFFER
IC142
12
13
14
11
10
15
2
5
9
3
4
Q146
BUFFER
FL141
L.P.F.
Q147~152
AMP
VC141
Y FREQ
VR141
Y LEV1
(AU-66H/65H)
ENC Y
R15A
CN321-3—CN801-3 (P IN P)
IC144
Q153
BUFFER
Y
TO W4 3/4
CPNH
TO W4 2/4
CPNH
TO W4 3/4
Q154
BUFFER
D165,166
Y CL
TO W4 3/4
Q81,82
BUFFER
VR81
VISC PHA
Q91
BUFFER
L91~93
C92~94
B.P.F.
IC91
1/2
IC781
M.M.
L174,175
C174~176
L.P.F.
Q160
BUFFER
IC165
VR165
C LEV
Q161
BUFFER
Q162~165
AMP
C
TO W4 2/4
C
TO W4 3/4

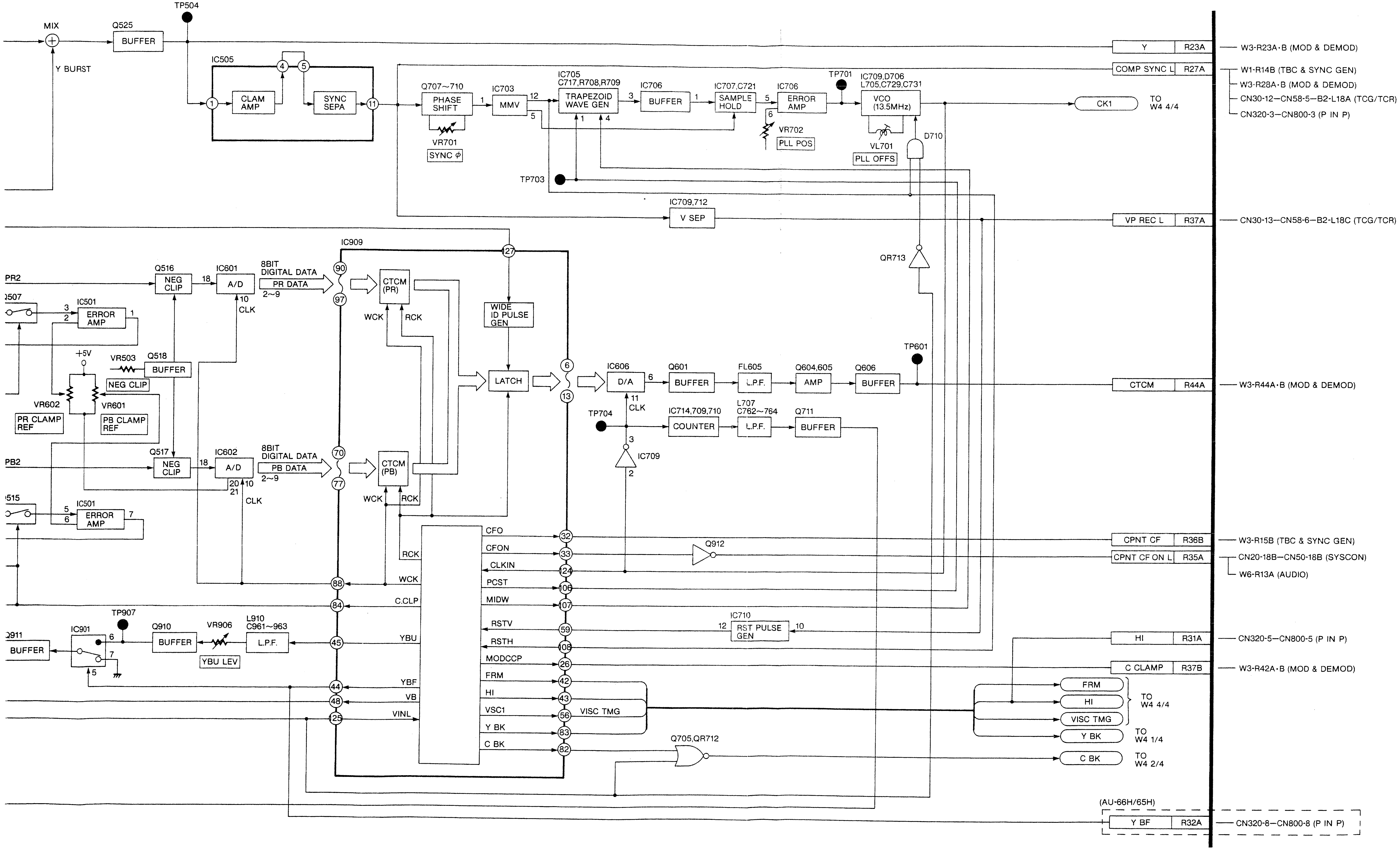
W4 (DEC & CTCM) BLOCK DIAGRAM (2/4)


FROM W4 1/4
CPNH
(VIDEO I/O) CN251-7—CN48-7
R9A
BNC PB
IC214
FROM W4 1/4
C
FROM W4 3/4
SCU
6
7
BALANCE MOD
9
PB
L220
C288~290
L.P.F.
Q230
BUFFER
VR212
PB TMG1
Q231,232
BUFFER
VR213
PB LEV1
Q233
PB BI
DC
+5VF
VR216
VR217
PR B
DC
TP206
VR214
L221
C296~298
Q234
Q235,236
4
3
BALANCE MOD
1
PR
L.P.F.
BUFFER
PR TMG1
BUFFER
VR215
PR LEV1
Q237
FROM W4 3/4
SCV
FROM W4 3/4
SYNC CP
(VIDEO I/O) CN251-9—CN48-9
R11A
BNC PR
Q240
FROM W4 4/4
C BK
GATE
FROM W4 3/4
BW
IC217
5
AMP
7
IC218
2
1
15
10
3
BUFFER
1
IC218
12
13
14
11
FROM W4 3/4
BGP
BGN
PAL

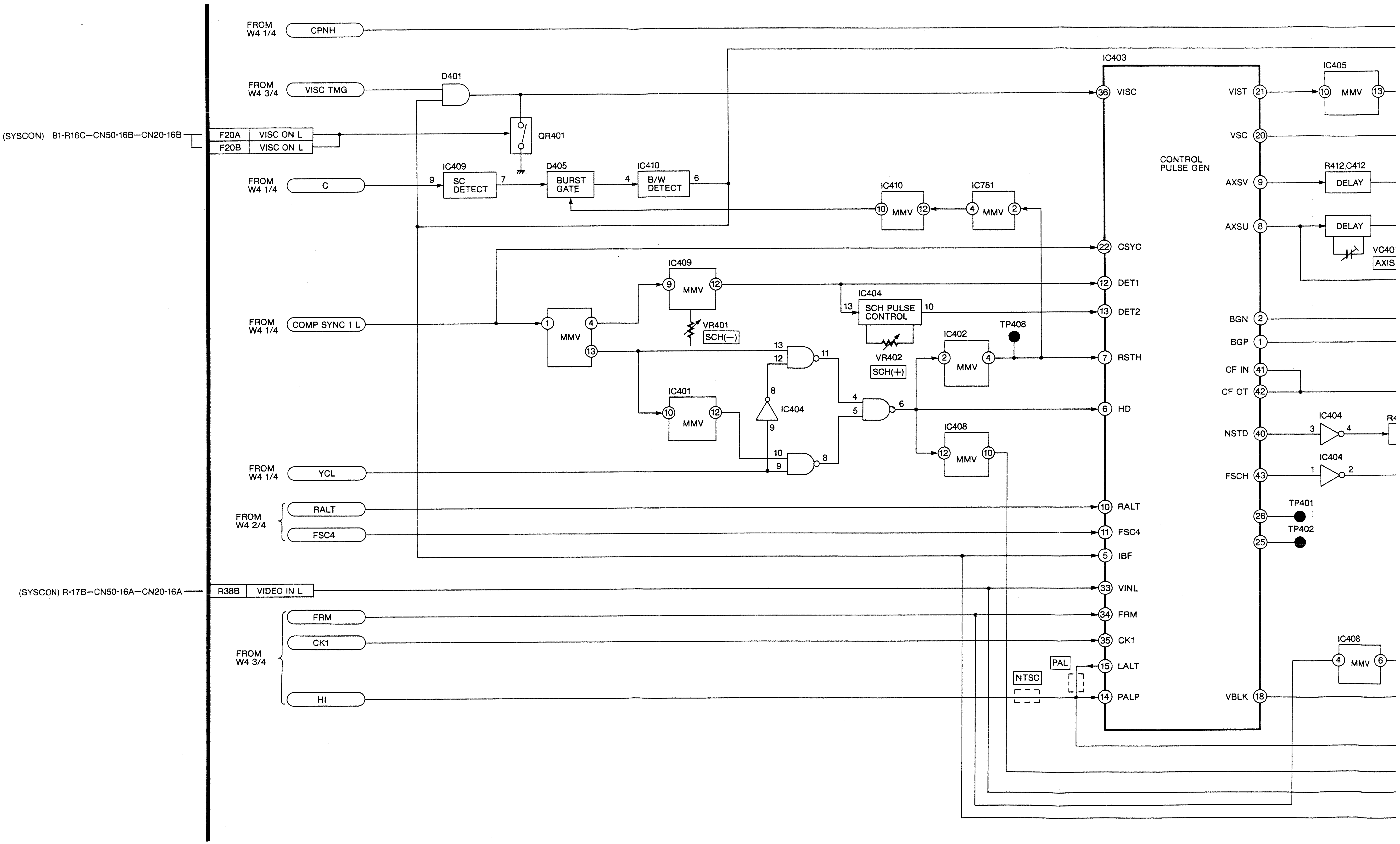

Q202
BUFFER
IC215
1
2
15
10
(AU-66H/65H)
Q204
BUFFER
ENC PB
R17A
CN321-5—CN801-5 (P IN P)
IC212
13
12
14
11
Q241
BUFFER
IC215
11
12
14
13
IC215
9
3
5
4
PB1
TO
W4 3/4
Q233
PB BLK
DC
+5VF
VR216
−5VF
VR217
PR BLK
DC
TP206
(AU-66H/65H)
Q201
BUFFER
ENC PR
R19A
CN321-7—CN801-7 (P IN P)
IC212
9
3
5
4
Q237
Q238
BUFFER
IC216
12
13
14
11
IC216
5
3
4
9
PR1
TO
W4 3/4
Q203
BUFFER
IC216
10
1
2
15
FSC4
TO
W4 1/4
IC218
12
13
14
11
IC219
3
AMP
7
IC220
2
AMP
7
3
VR218
AXIS 1
X201
VCO
FSC4
TO
W4 4/4
Q243
RALT
TO
W4 3/4
PAL

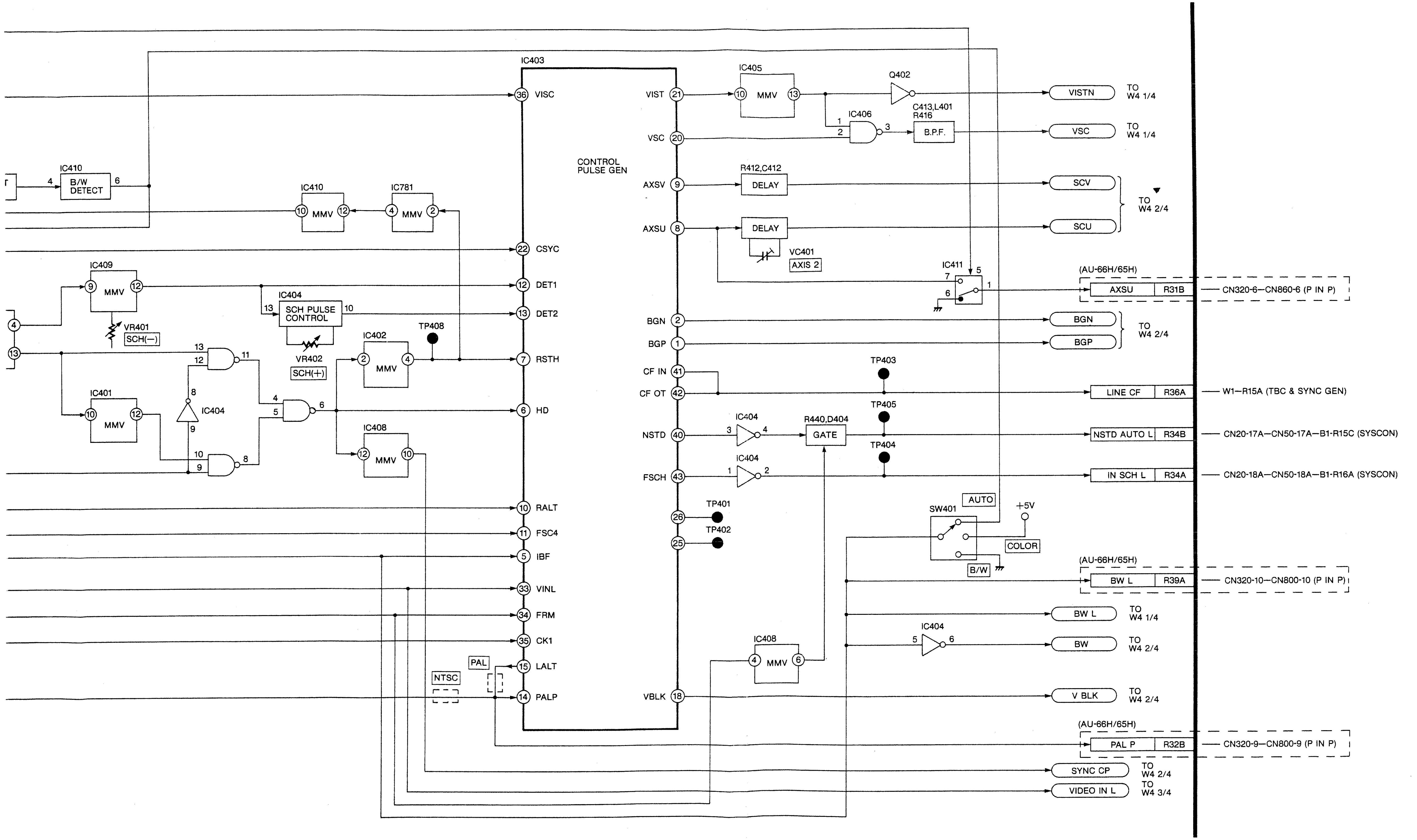
W4 (DEC & CTCM) BLOCK DIAGRAM (3/4)


FROM W4 1/4
Y
MIX
Y BURST
Q525
BUFFER
TP504
IC505
CLAM AMP
SYNC SEPA
Q707~710
PHASE SHIFT
VR701
SYNC φ
IC703
MMV
IC705
C717,R708,R709
TRAPEZOID WAVE GEN
IC706
BUFFER
IC707,C721
SAMPLE HOLD
IC706
ERR AMP
VR702
PLL PC
TP703
IC709,712
V SEP
(SYSCON) B1-L16B—CN50-14A—CN20-14A
R40B
EE WIDE L
IC909
TP501
Q501,502
PHASE SHIFT
VC501
PR TMG2
L504,505
C536,537,546
C547,549
L.P.F.
Q503~506
AMP
VR501
PR LEV2
PR1
PR2
Q507
IC501
ERROR AMP
Q516
NEG CLIP
IC601
A/D
8BIT DIGITAL DATA
PR DATA
2~9
CLK
CTCM (PR)
WCK
RCK
WIDE ID PULSE GEN
LATCH
FROM W4 2/4
+5V
VR503
Q518
BUFFER
NEG CLIP
VR602
VR601
PR CLAMP REF
PB CLAMP REF
IC606
D/A
Q601
BUFFER
FL605
L.P.F.
TP704
CLK
IC714,709,710
COUNTER
L707
C762~764
L.P.F.
IC709
TP502
Q509,510
PHASE SHIFT
VC502
PB TMG2
L507,508
C525~529
L.P.F.
Q511~514
AMP
VR502
PB LEV2
PB1
PB2
Q515
IC501
ERROR AMP
Q517
NEG CLIP
IC602
A/D
8BIT DIGITAL DATA
PB DATA
2~9
CLK
CTCM (PB)
WCK
RCK
QR502
QR501
RCK
WCK
C.CLP
TP907
IC901
Q910
BUFFER
VR906
YBU LEV
L910
C961~963
L.P.F.
YBU
Q911
BUFFER
YBF
VB
VINL
FROM W4 4/4
VIDEO IN L
CFO
CFON
CLKIN
PCST
MIDW
RSTV
RSTH
MODCCP
FRM
HI
VSC1
Y BK
C BK
VISC TMG
Q912
IC710
RST PULSE GEN
Q705,QR712

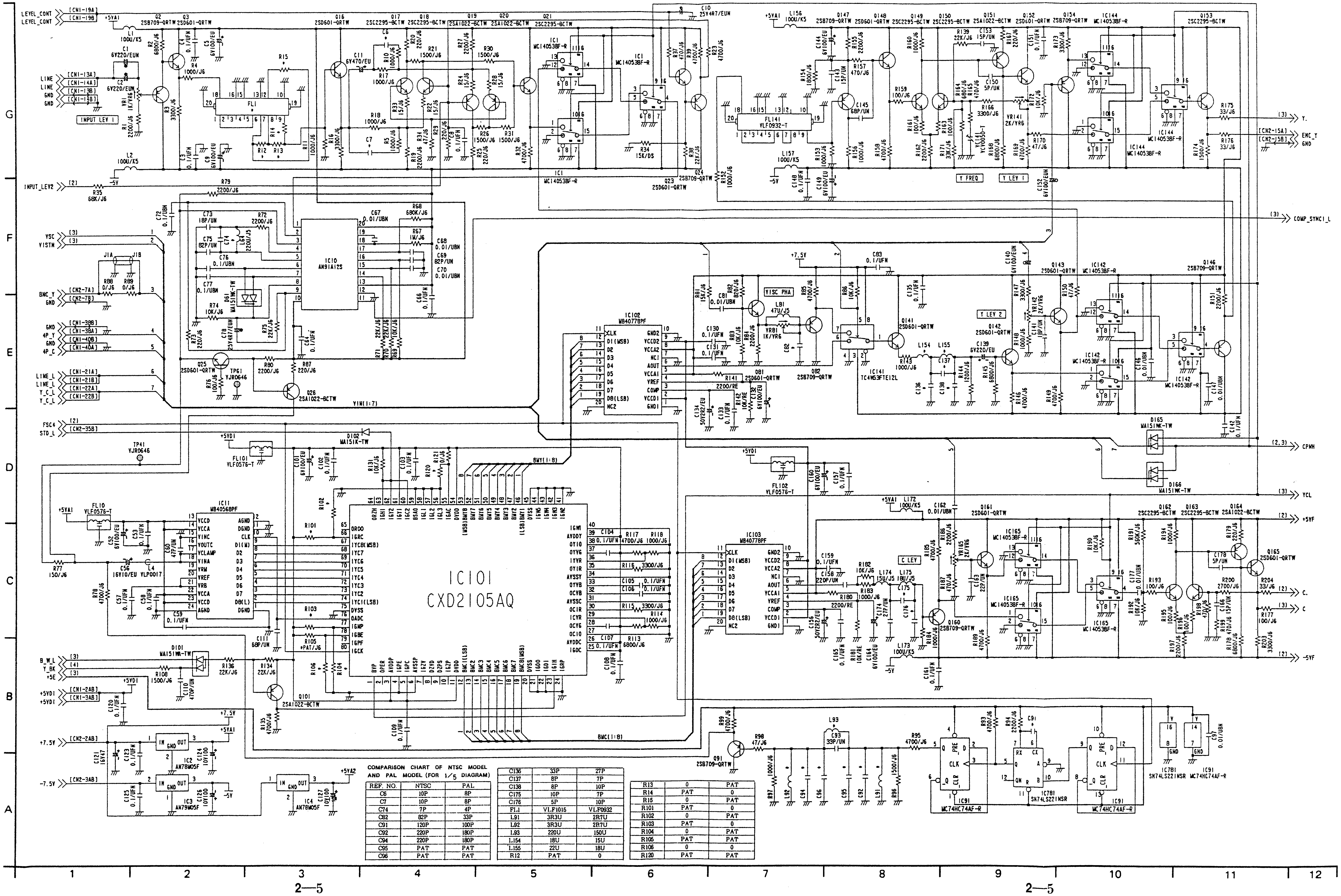

TP504
MIX
Q525
BUFFER
Y BURST
IC505
CLAM AMP
SYNC SEPA
Y
R23A
W3-R23A·B (MOD & DEMOD)
COMP SYNC L
R27A
W1-R14B (TBC & SYNC GEN)
W3-R28A·B (MOD & DEMOD)
CN30-12—CN58-5—B2-L18A (TCG/TCR)
CN320-3—CN800-3 (P IN P)
Q707~710
PHASE SHIFT
VR701
SYNC φ
IC703
MMV
IC705
C717,R708,R709
TRAPEZOID WAVE GEN
IC706
BUFFER
IC707,C721
SAMPLE HOLD
IC706
ERROR AMP
VR702
PLL POS
TP701
IC709,D706
L705,C729,C731
VCO (13.5MHz)
VL701
PLL OFFS
D710
CK1
TO W4 4/4
TP703
IC709,712
V SEP
VP REC L
R37A
CN30-13—CN58-6—B2-L18C (TCG/TCR)
IC909
QR713
PR2
Q516
NEG CLIP
IC601
A/D
CLK
8BIT DIGITAL DATA
PR DATA
2~9
CTCM (PR)
WCK
RCK
WIDE ID PULSE GEN
LATCH
Q507
IC501
ERROR AMP
+5V
VR503
Q518
BUFFER
NEG CLIP
VR602
PR CLAMP REF
VR601
PB CLAMP REF
TP601
IC606
D/A
CLK
Q601
BUFFER
FL605
L.P.F.
Q604,605
AMP
Q606
BUFFER
CTCM
R44A
W3-R44A·B (MOD & DEMOD)
TP704
IC714,709,710
COUNTER
L707
C762~764
L.P.F.
Q711
BUFFER
IC709
PB2
Q517
NEG CLIP
IC602
A/D
CLK
8BIT DIGITAL DATA
PB DATA
2~9
CTCM (PB)
WCK
RCK
Q515
IC501
ERROR AMP
CFO
CFON
CLKIN
PCST
MIDW
RSTV
RSTH
MODCCP
FRM
HI
VSC1
Y BK
C BK
RCK
WCK
C.CLP
YBU
YBF
VB
VINL
Q912
CPNT CF
R36B
W3-R15B (TBC & SYNC GEN)
CPNT CF ON L
R35A
CN20-18B—CN50-18B (SYSCON)
W6-R13A (AUDIO)
IC710
RST PULSE GEN
HI
R31A
CN320-5—CN800-5 (P IN P)
C CLAMP
R37B
W3-R42A·B (MOD & DEMOD)
VISC TMG
FRM
HI
VISC TMG
TO W4 4/4
Y BK
TO W4 1/4
Q705,QR712
C BK
TO W4 2/4
TP907
Q911
BUFFER
IC901
Q910
BUFFER
VR906
YBU LEV
L910
C961~963
L.P.F.
(AU-66H/65H)
Y BF
R32A
CN320-8—CN800-8 (P IN P)

W4 (DEC & CTCM) BLOCK DIAGRAM (4/4)


FROM W4 1/4
CPNH
FROM W4 3/4
VISC TMG
D401
IC403
VISC
VIST
IC405
MMV
(SYSCON) B1-R16C—CN50-16B—CN20-16B
F20A
VISC ON L
F20B
VISC ON L
QR401
VSC
CONTROL PULSE GEN
IC409
SC DETECT
D405
BURST GATE
IC410
B/W DETECT
FROM W4 1/4
C
AXSV
R412,C412
DELAY
IC410
MMV
IC781
MMV
AXSU
DELAY
CSYC
VC40
AXIS
IC409
MMV
DET1
IC404
SCH PULSE CONTROL
DET2
FROM W4 1/4
COMP SYNC 1 L
MMV
VR401
SCH(−)
BGN
BGP
IC402
TP408
VR402
SCH(+)
MMV
RSTH
CF IN
CF OT
IC401
MMV
IC404
HD
IC404
NSTD
IC408
MMV
IC404
FSCH
FROM W4 1/4
YCL
FROM W4 2/4
RALT
FSC4
RALT
FSC4
TP401
TP402
IBF
(SYSCON) R-17B—CN50-16A—CN20-16A
R38B
VIDEO IN L
VINL
FROM W4 3/4
FRM
CK1
HI
FRM
CK1
PAL
LALT
NTSC
PALP
VBLK
IC408
MMV


IC403
VISC
CONTROL PULSE GEN
CSYC
DET1
DET2
RSTH
HD
RALT
FSC4
IBF
VINL
FRM
CK1
LALT
PALP
VIST
VSC
AXSV
AXSU
BGN
BGP
CF IN
CF OT
NSTD
FSCH
VBLK
IC410
B/W DETECT
IC410
MMV
IC781
MMV
IC409
MMV
VR401
SCH(−)
IC404
SCH PULSE CONTROL
VR402
SCH(+)
IC402
MMV
TP408
IC401
MMV
IC404
IC408
MMV
NTSC
PAL
IC405
MMV
Q402
IC406
C413,L401
R416
B.P.F.
R412,C412
DELAY
DELAY
VC401
AXIS 2
IC411
TP403
TP405
R440,D404
GATE
IC404
TP404
IC404
TP401
TP402
SW401
AUTO
+5V
COLOR
B/W
IC408
MMV
IC404
VISTN
TO W4 1/4
VSC
TO W4 1/4
SCV
SCU
TO W4 2/4
(AU-66H/65H)
AXSU
R31B
CN320-6—CN860-6 (P IN P)
BGN
BGP
TO W4 2/4
LINE CF
R36A
W1—R15A (TBC & SYNC GEN)
NSTD AUTO L
R34B
CN20-17A—CN50-17A—B1-R15C (SYSCON)
IN SCH L
R34A
CN20-18A—CN50-18A—B1-R16A (SYSCON)
(AU-66H/65H)
BW L
R39A
CN320-10—CN800-10 (P IN P)
BW L
TO W4 1/4
BW
TO W4 2/4
V BLK
TO W4 2/4
(AU-66H/65H)
PAL P
R32B
CN320-9—CN800-9 (P IN P)
SYNC CP
TO W4 2/4
VIDEO IN L
TO W4 3/4

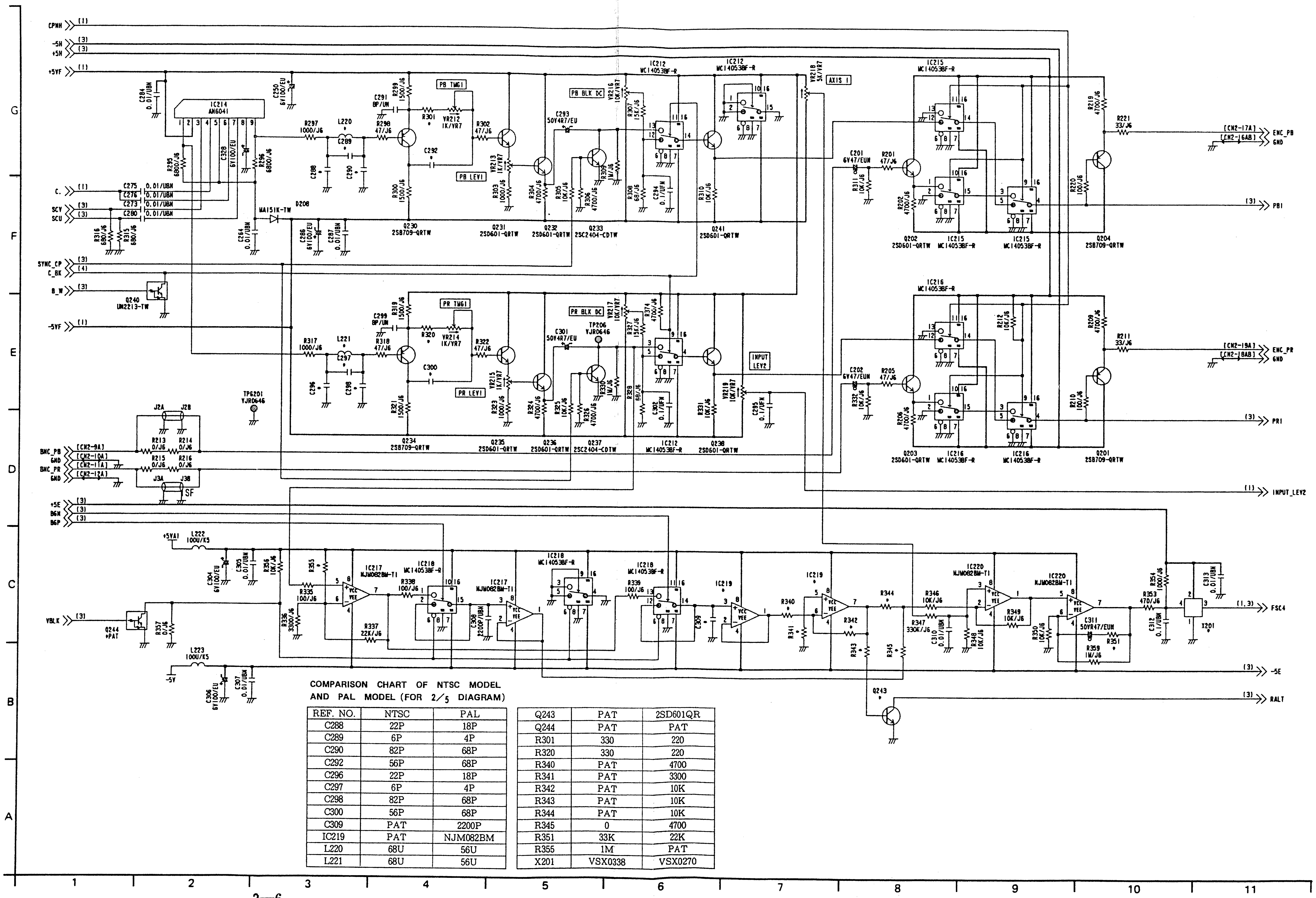
W4 (DEC & CTCM) SCHEMATIC DIAGRAM (1/5)


LEVEL_CONT
LEVEL_CONT
LINE
LINE
GND
GND
INPUT LEV 1
INPUT_LEV2
YSC
YISTN
BNC_Y
GND
GND
4P_Y
GND
4P_C
LINE_L
LINE_L
Y_C_L
Y_C_L
FSC4
STD_L
TP41 YJR0646
B_W_L
Y_BK
+5E
+5YD1
+5YD1
+7.5V
-7.5V
FL1
IC1 MC14053BF-R
IC10 AN91A12S
IC11 MB40568PF
IC101 CXD2105AQ
IC102 MB40778PF
IC103 MB40778PF
IC141 TC4W53FTE12L
FL141 YLF0932-T
FL101 YLF0576-T
FL102 YLF0576-T
FL10 YLF0576-T
IC2 AN78M05F
IC3 AN79M05F
IC4 AN78M05F
IC91 MC74HC74AF-R
IC781 SN74LS221NSR
YIN(1:7)
BMY(1:8)
BMC(1:8)
Y FREQ
Y LEV 1
Y LEV 2
YISC PHA
C LEV
Y
ENC_Y
GND
COMP_SYNC1_L
CPMH
YCL
+5YF
C
C
-5YF
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

COMPARISON CHART OF NTSC MODEL AND PAL MODEL (FOR 1/5 DIAGRAM)

REF. NO.	NTSC	PAL
C6	10P	8P
C7	10P	8P
C74	7P	4P
C82	82P	33P
C91	120P	100P
C92	220P	180P
C94	220P	180P
C95	PAT	PAT
C96	PAT	PAT
C136	33P	27P
C137	8P	7P
C138	8P	10P
C175	10P	7P
C176	5P	10P
FL1	VLF1015	VLF0932
L91	3R3U	2R7U
L92	3R3U	2R7U
L93	220U	150U
L154	18U	15U
L155	22U	18U
R12	PAT	0
R13	0	PAT
R14	PAT	0
R15	0	PAT
R101	PAT	0
R102	0	PAT
R103	PAT	0
R104	0	PAT
R105	PAT	PAT
R106	0	0
R120	PAT	PAT

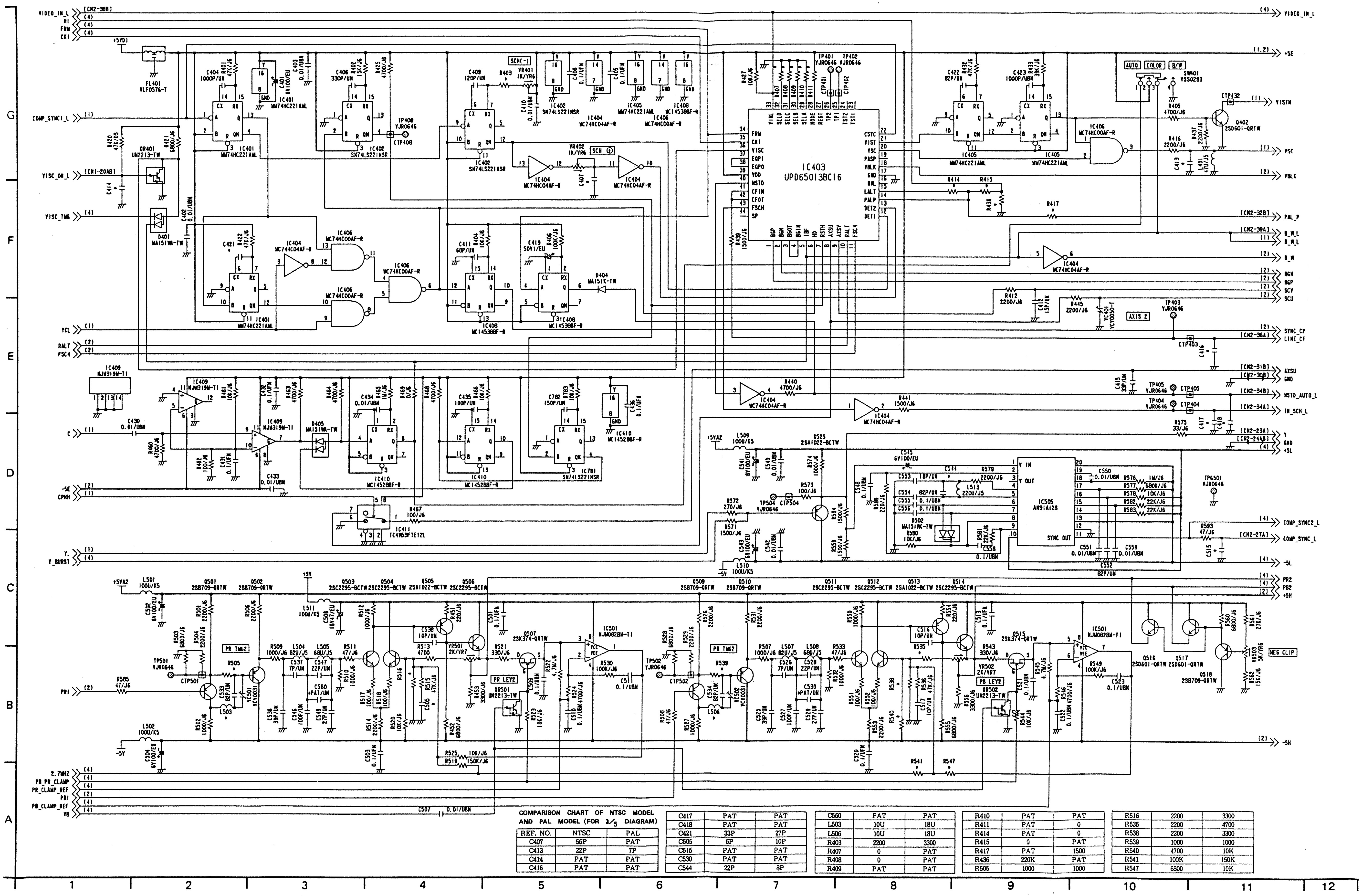
W4 (DEC & CTCM) SCHEMATIC DIAGRAM (2/5)


CPNH
-5H
+5H
+5VF
C.
SCY
SCU
SYNC_CP
C_BK
B_W
-5VF
BNC_PB
GND
BNC_PR
+5E
BGN
BGP
YBLK
IC214 AN6041
IC212 MC14053BF-R
IC215 MC14053BF-R
IC216 MC14053BF-R
IC217 NJM082BM-T1
IC218 MC14053BF-R
IC220 NJM082BM-T1
IC219
PB TMG1
PB LEV1
PB BLK DC
PR TMG1
PR LEV1
PR BLK DC
AXIS 1
INPUT LEV2
Q230 2SB709-QRTW
Q231 2SD601-QRTW
Q232 2SD601-QRTW
Q233 2SC2404-CDTW
Q241 2SD601-QRTW
Q234 2SB709-QRTW
Q235 2SD601-QRTW
Q236 2SD601-QRTW
Q237 2SC2404-CDTW
Q238 2SD601-QRTW
Q202 2SD601-QRTW
Q204 2SB709-QRTW
Q203 2SD601-QRTW
Q201 2SB709-QRTW
Q240 UM2213-TW
Q243
Q244 *PAT
D208 MA151K-TW
TP6201 YJR0646
TP206 YJR0646
X201
[CN2-17A] ENC_PB
[CN2-16AB] GND
[CN2-19A] ENC_PR
[CN2-18AB] GND
PB1
PR1
INPUT_LEV2
FSC4
-5E
RALT
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

COMPARISON CHART OF NTSC MODEL AND PAL MODEL (FOR 2/5 DIAGRAM)

REF. NO.	NTSC	PAL
C288	22P	18P
C289	6P	4P
C290	82P	68P
C292	56P	68P
C296	22P	18P
C297	6P	4P
C298	82P	68P
C300	56P	68P
C309	PAT	2200P
IC219	PAT	NJM082BM
L220	68U	56U
L221	68U	56U
Q243	PAT	2SD601QR
Q244	PAT	PAT
R301	330	220
R320	330	220
R340	PAT	4700
R341	PAT	3300
R342	PAT	10K
R343	PAT	10K
R344	PAT	10K
R345	0	4700
R351	33K	22K
R355	1M	PAT
X201	VSX0338	VSX0270

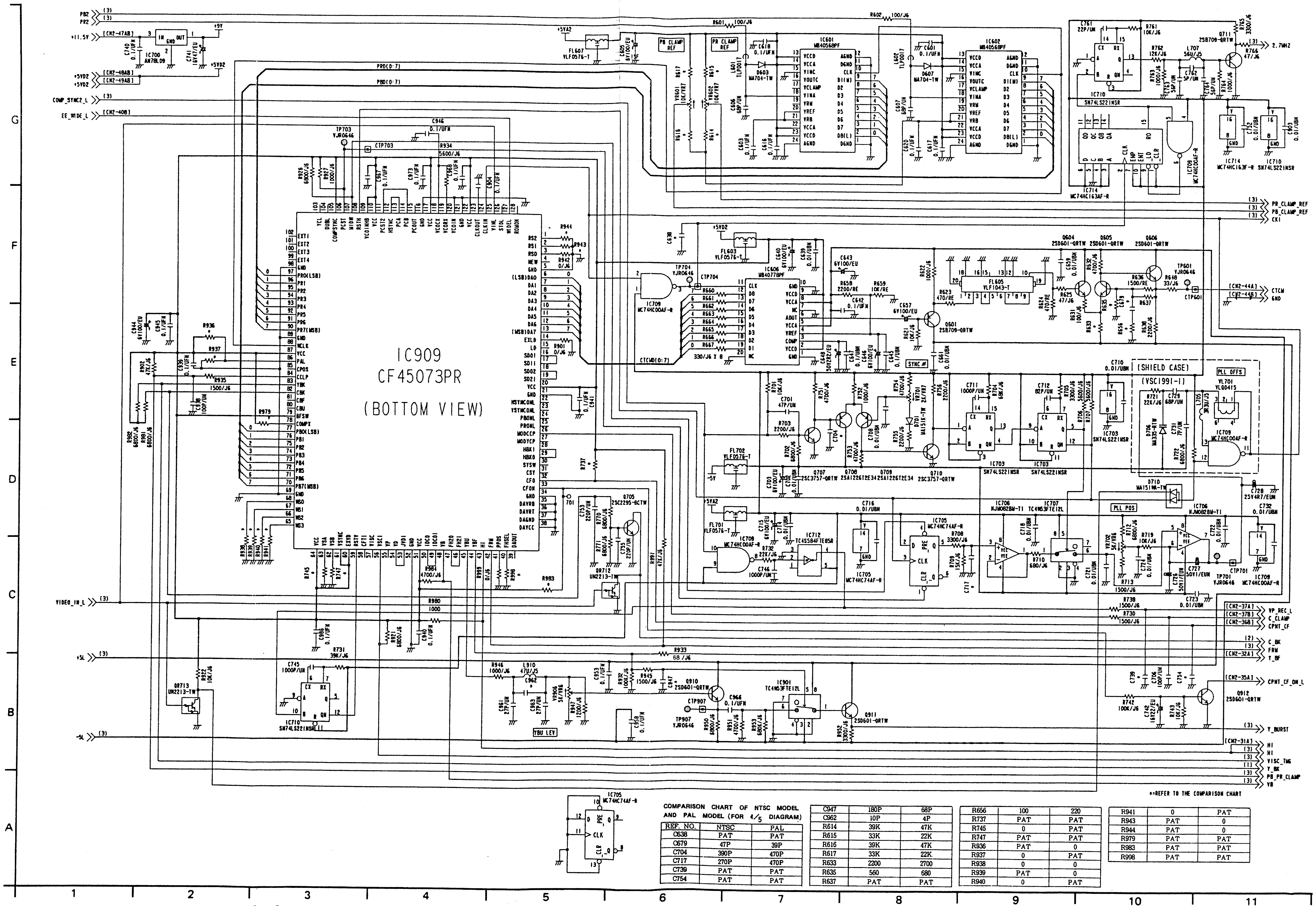
W4 (DEC & CTCM) SCHEMATIC DIAGRAM (3/5)


VIDEO_IN_L
HI
FRM
CKI
COMP_SYNC1_L
VISC_ON_L
VISC_TMG
YCL
RALT
FSC4
C
-5E
CPNH
Y
Y_BURST
+5YA2
-5Y
PRI
2.7MHZ
PB_PR_CLAMP
PR_CLAMP_REF
PBI
PB_CLAMP_REF
YB
FL401
YLF0576-T
IC401
MM74HC221AML
IC402
SN74LS221NSR
IC403
UPD65013BC16
IC404
MC74HC04AF-R
IC405
MM74HC221AML
IC406
MC74HC00AF-R
IC408
MC14538BF-R
IC409
NJM319M-T1
IC410
MC14528BF-R
IC411
TC4W53FTE12L
IC505
AN91A12S
IC501
NJM082BM-T1
IC781
SN74LS221NSR
SCH(-)
SCH
AUTO
COLOR
B/W
SW401
YSS0283
AXIS Z
PR TMG2
PB TMG2
PR LEY2
PB LEY2
NEG CLIP
VIDEO_IN_L
+5E
VISTH
YSC
YBLK
PAL_P
B_W_L
B_W_L
B_W
BGN
BGP
SCY
SCU
SYNC_CP
LINE_CF
AXSU
GND
NSTD_AUTO_L
IN_SCH_L
Y
GND
+5L
COMP_SYNC2_L
COMP_SYNC_L
-5L
PR2
PB2
+5H
-5H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

COMPARISON CHART OF NTSC MODEL AND PAL MODEL (FOR 3/5 DIAGRAM)

REF. NO.	NTSC	PAL
C407	56P	PAT
C413	22P	7P
C414	PAT	PAT
C416	PAT	PAT
C417	PAT	PAT
C418	PAT	PAT
C421	33P	27P
C505	6P	10P
C515	PAT	PAT
C530	PAT	PAT
C544	22P	8P
C560	PAT	PAT
L503	10U	18U
L506	10U	18U
R403	2200	3300
R407	0	PAT
R408	0	PAT
R409	PAT	PAT
R410	PAT	PAT
R411	PAT	0
R414	PAT	0
R415	0	PAT
R417	PAT	1500
R436	220K	PAT
R505	1000	1000
R516	2200	3300
R535	2200	4700
R538	2200	3300
R539	1000	1000
R540	4700	10K
R541	100K	150K
R547	6800	10K

W4 (DEC & CTCM) SCHEMATIC DIAGRAM (4/5)

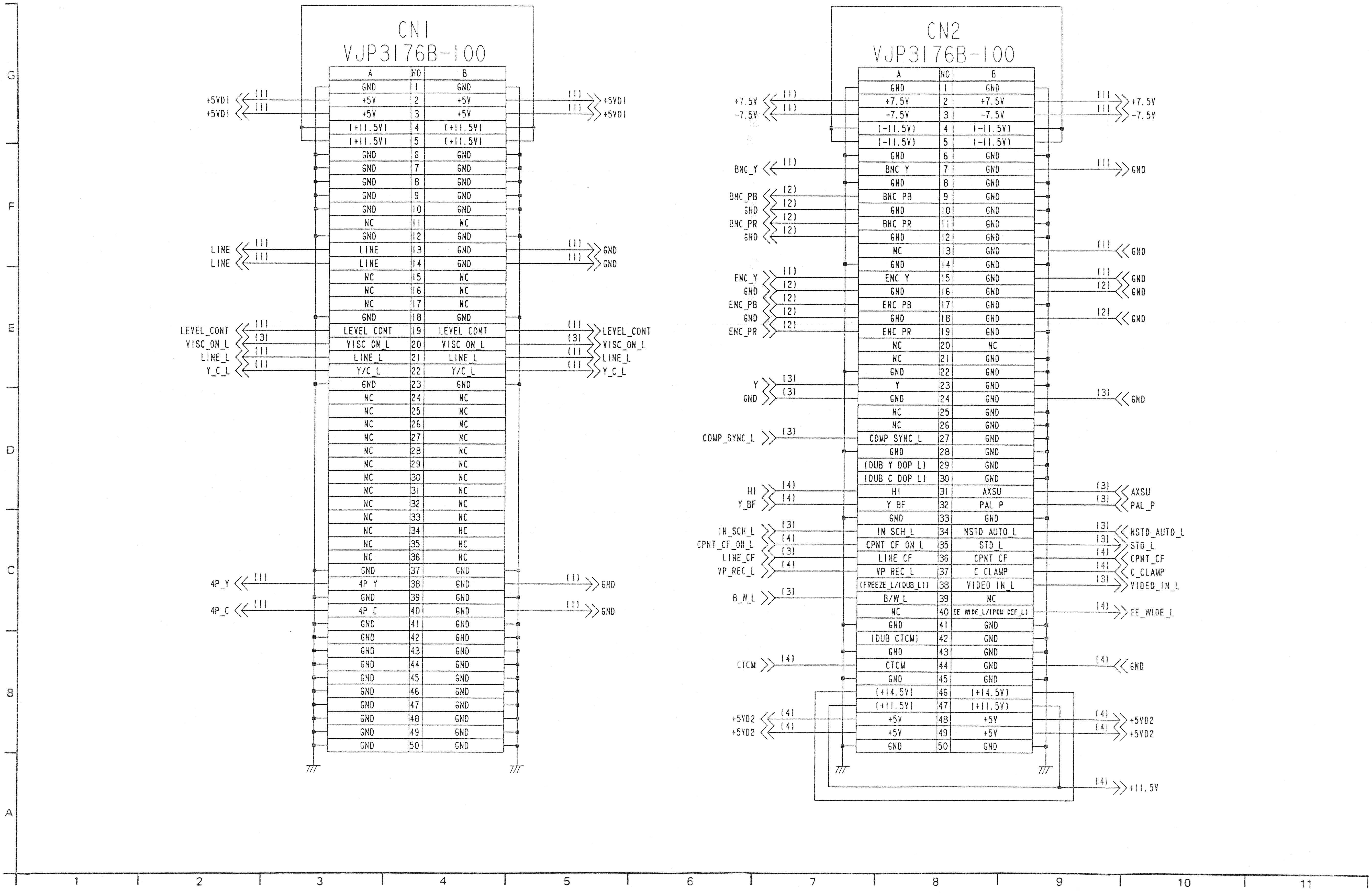

IC909
CF45073PR
(BOTTOM VIEW)
IC601 MB40568PF
IC602 MB40568PF
IC606 MB40778PF
IC700 AN78L09
IC703 SN74LS221NSR
IC705 MC74HC74AF-R
IC706 NJM082BM-T1
IC707 TC4W53FTE12L
IC709 MC74HC00AF-R
IC710 SN74LS221NSR
IC712 TC4S584FTE85R
IC714 MC74HC163AF-R
IC901 TC4W53FTE12L
(SHIELD CASE)
(VSC1991-1)
PLL OFFS
PLL POS
SYNC
PB CLAMP REF
PR CLAMP REF
YBU LEV
PB2
PR2
+11.5Y
+5YD2
COMP_SYNC2_L
EE_WIDE_L
VIDEO_IN_L
+5L
-5L
PR_CLAMP_REF
PB_CLAMP_REF
CK1
CTCM
GND
VP_REC_L
C_CLAMP
CPNT_CF
C_BK
FRM
Y_BF
CPNT_CF_ON_L
Y_BURST
HI
VISC_TMG
Y_BK
PB_PR_CLAMP
YB
2.7MHZ
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G

*=REFER TO THE COMPARISON CHART

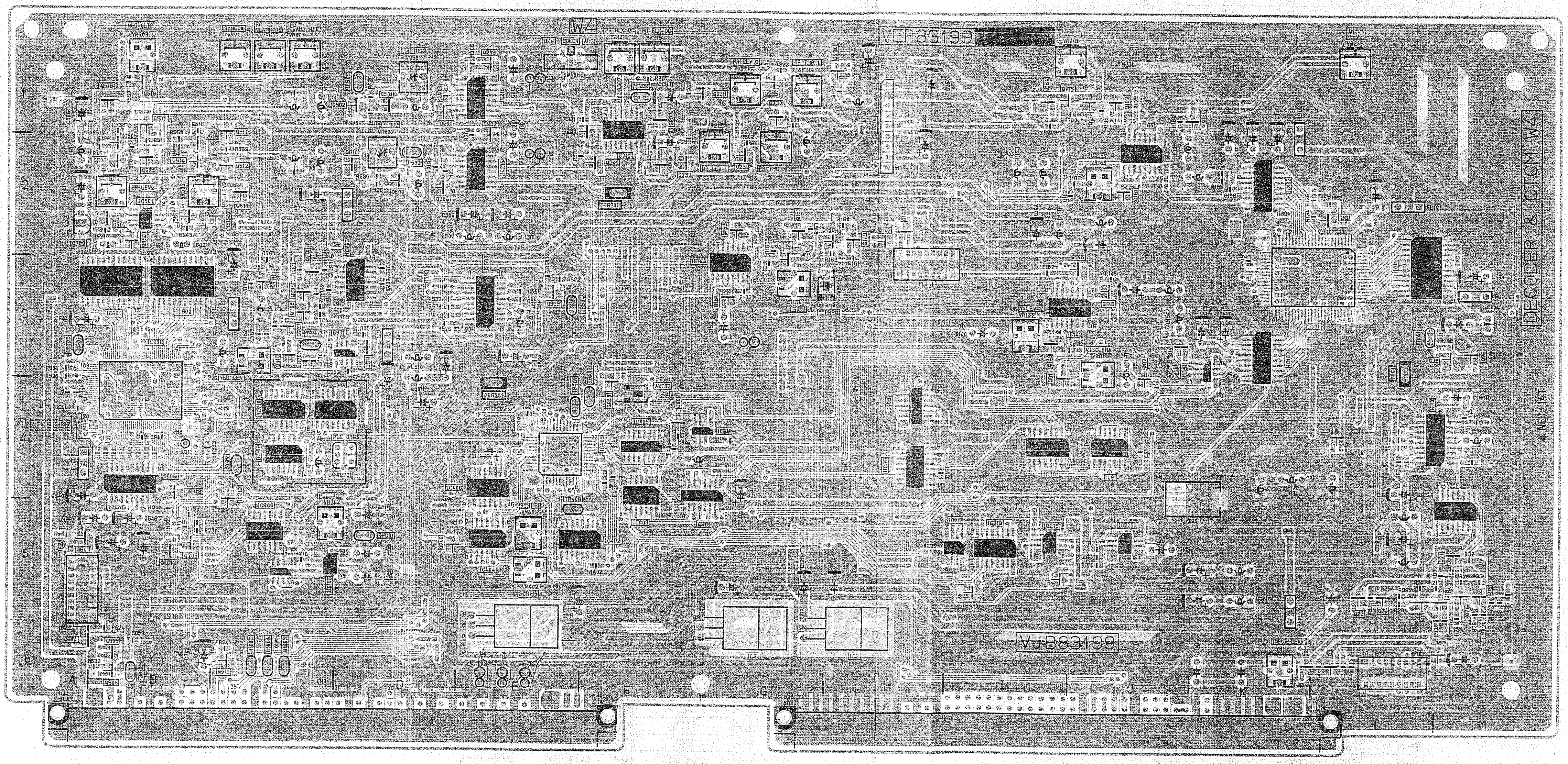
COMPARISON CHART OF NTSC MODEL AND PAL MODEL (FOR 4/5 DIAGRAM)

REF. NO.	NTSC	PAL
C638	PAT	PAT
C679	47P	39P
C704	390P	470P
C717	270P	470P
C739	PAT	PAT
C754	PAT	PAT
C947	180P	68P
C962	10P	4P
R614	39K	47K
R615	33K	22K
R616	39K	47K
R617	33K	22K
R633	2200	2700
R635	560	680
R637	PAT	PAT
R656	100	220
R737	PAT	PAT
R745	0	PAT
R747	PAT	PAT
R936	PAT	0
R937	0	PAT
R938	0	0
R939	PAT	0
R940	0	PAT
R941	0	PAT
R943	PAT	0
R944	PAT	0
R979	PAT	PAT
R983	PAT	PAT
R998	PAT	PAT

W4 (DEC & CTCM) SCHEMATIC DIAGRAM (5/5)


CN1
VJP3176B-100
A | NO | B
GND | 1 | GND
+5V | 2 | +5V
+5V | 3 | +5V
(+11.5V) | 4 | (+11.5V)
(+11.5V) | 5 | (+11.5V)
GND | 6 | GND
GND | 7 | GND
GND | 8 | GND
GND | 9 | GND
GND | 10 | GND
NC | 11 | NC
GND | 12 | GND
LINE | 13 | GND
LINE | 14 | GND
NC | 15 | NC
NC | 16 | NC
NC | 17 | NC
GND | 18 | GND
LEVEL CONT | 19 | LEVEL CONT
VISC ON L | 20 | VISC ON L
LINE L | 21 | LINE L
Y/C L | 22 | Y/C L
GND | 23 | GND
NC | 24 | NC
NC | 25 | NC
NC | 26 | NC
NC | 27 | NC
NC | 28 | NC
NC | 29 | NC
NC | 30 | NC
NC | 31 | NC
NC | 32 | NC
NC | 33 | NC
NC | 34 | NC
NC | 35 | NC
NC | 36 | NC
GND | 37 | GND
4P Y | 38 | GND
GND | 39 | GND
4P C | 40 | GND
GND | 41 | GND
GND | 42 | GND
GND | 43 | GND
GND | 44 | GND
GND | 45 | GND
GND | 46 | GND
GND | 47 | GND
GND | 48 | GND
GND | 49 | GND
GND | 50 | GND
+5VD1 (1)
+5VD1 (1)
LINE (1)
LINE (1)
LEVEL_CONT (1)
VISC_ON_L (3)
LINE_L (1)
Y_C_L (1)
4P_Y (1)
4P_C (1)
(1) +5VD1
(1) +5VD1
(1) GND
(1) GND
(1) LEVEL_CONT
(3) VISC_ON_L
(1) LINE_L
(1) Y_C_L
(1) GND
(1) GND
CN2
VJP3176B-100
A | NO | B
GND | 1 | GND
+7.5V | 2 | +7.5V
-7.5V | 3 | -7.5V
(-11.5V) | 4 | (-11.5V)
(-11.5V) | 5 | (-11.5V)
GND | 6 | GND
BNC Y | 7 | GND
GND | 8 | GND
BNC PB | 9 | GND
GND | 10 | GND
BNC PR | 11 | GND
GND | 12 | GND
NC | 13 | GND
GND | 14 | GND
ENC Y | 15 | GND
GND | 16 | GND
ENC PB | 17 | GND
GND | 18 | GND
ENC PR | 19 | GND
NC | 20 | NC
NC | 21 | GND
GND | 22 | GND
Y | 23 | GND
GND | 24 | GND
NC | 25 | GND
NC | 26 | GND
COMP SYNC L | 27 | GND
GND | 28 | GND
(DUB Y DOP L) | 29 | GND
(DUB C DOP L) | 30 | GND
HI | 31 | AXSU
Y BF | 32 | PAL P
GND | 33 | GND
IN SCH L | 34 | NSTD AUTO L
CPNT CF ON L | 35 | STD L
LINE CF | 36 | CPNT CF
VP REC L | 37 | C CLAMP
(FREEZE_L/(DUB_L)) | 38 | VIDEO IN L
B/W L | 39 | NC
NC | 40 | EE WIDE_L/(PCM DEF_L)
GND | 41 | GND
(DUB CTCM) | 42 | GND
GND | 43 | GND
CTCM | 44 | GND
GND | 45 | GND
(+14.5V) | 46 | (+14.5V)
(+11.5V) | 47 | (+11.5V)
+5V | 48 | +5V
+5V | 49 | +5V
GND | 50 | GND
+7.5V (1)
-7.5V (1)
BNC_Y (1)
BNC_PB (2)
GND (2)
BNC_PR (2)
GND (2)
ENC_Y (1)
GND (2)
ENC_PB (2)
GND (2)
ENC_PR (2)
Y (3)
GND (3)
COMP_SYNC_L (3)
HI (4)
Y_BF (4)
IN_SCH_L (3)
CPNT_CF_ON_L (4)
LINE_CF (3)
VP_REC_L (4)
B_W_L (3)
CTCM (4)
+5VD2 (4)
+5VD2 (4)
(1) +7.5V
(1) -7.5V
(1) GND
(1) GND
(1) GND
(2) GND
(2) GND
(3) GND
(3) AXSU
(3) PAL_P
(3) NSTD_AUTO_L
(3) STD_L
(4) CPNT_CF
(4) C_CLAMP
(3) VIDEO_IN_L
(4) EE_WIDE_L
(4) GND
(4) +5VD2
(4) +5VD2
(4) +11.5V
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

W4 (DEC&CTCM) P.C.BOARD (VEP83199A) FOR [NTSC]
(VEP83199B) FOR [PAL]



(COMPONENT SIDE)

DECODER & CTCM P.C.BOARD

TRANSISTOR	
Q2	K-6
Q3	L-6
Q16	M-6
Q17	L-5
Q18	M-5
Q19	M-5
Q20	M-5
Q21	M-5
Q23	L-5
Q24	L-5
Q25	M-3
Q26	M-3
Q81	I-3
Q82	J-3
Q91	L-4
Q101	L-2
Q141	J-3
Q142	J-3
Q143	I-3
Q146	J-3
Q147	H-2
Q148	H-2
Q149	H-2
Q150	H-2
Q151	G-2
Q152	G-2
Q153	G-2
Q154	G-3
Q160	K-1
Q161	J-2
Q162	J-1
Q163	J-1
Q164	I-1
Q165	I-1
Q201	D-1
Q202	E-1
Q203	E-1
Q204	D-2
Q230	G-1
Q231	G-2
Q232	F-2
Q233	F-2
Q234	H-1
Q235	G-1
Q236	G-1
Q237	F-1
Q238	F-1
Q240	D-5
Q241	F-2
Q243	I-5
Q244	I-5
Q402	F-4
Q501	D-1
Q502	D-1
Q503	B-1
Q504	B-2
Q505	B-2
Q506	B-2
Q507	B-2
Q509	D-2
Q510	D-2
Q511	C-1
Q512	C-2
Q513	B-2
Q514	B-2
Q515	B-2
Q516	B-1
Q517	C-2
Q518	B-1
Q525	E-3
Q601	A-5
Q604	A-6
Q605	B-6
Q606	B-6
Q605	B-5
Q607	C-3
Q608	C-3
Q609	C-3
Q610	C-3
Q611	C-3
Q910	C-3
Q911	D-3
Q912	C-6
QR401	F-4
QR501	B-2
QR502	C-2
QR712	B-5
QR713	B-4

INTEGRATED CIRCUIT	
IC1	M-5
IC2	H-6
IC3	G-6
IC4	E-6
IC10	M-4
IC11	L-3
IC91	J-4
IC101	L-3
IC102	K-3
IC103	K-2
IC141	K-3
IC142	J-3
IC144	G-3
IC165	J-2
IC212	F-1
IC214	H-1
IC215	E-2
IC216	E-1
IC217	I-5
IC218	I-5
IC219	I-5
IC220	J-5
IC401	G-5
IC402	F-5
IC403	E-4
IC404	E-5
IC405	F-4
IC406	F-4
IC408	E-4
IC409	H-4
IC410	H-4
IC411	G-4
IC501	B-2
IC505	E-3
IC601	B-3
IC602	B-3
IC606	B-4
IC700	A-2
IC703	D-3
IC705	C-5
IC706	C-5
IC707	C-5
IC709	C-4
IC710	C-4
IC712	C-5
IC714	D-4
IC781	I-4
IC901	D-3
IC909	B-4

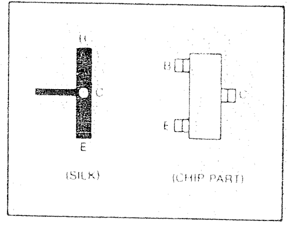
TEST POINT	
TP41	L-3
TP206	F-1
TP401	E-4
TP402	F-4
TP403	C-6
TP404	C-6
TP405	C-6
TP408	E-5
TP501	D-1
TP502	D-2
TP504	E-3
TP601	B-6
TP701	D-5
TP703	A-3
TP704	C-4
TP907	C-3
TPG1	L-3
TPG201	F-2
TPG501	E-4

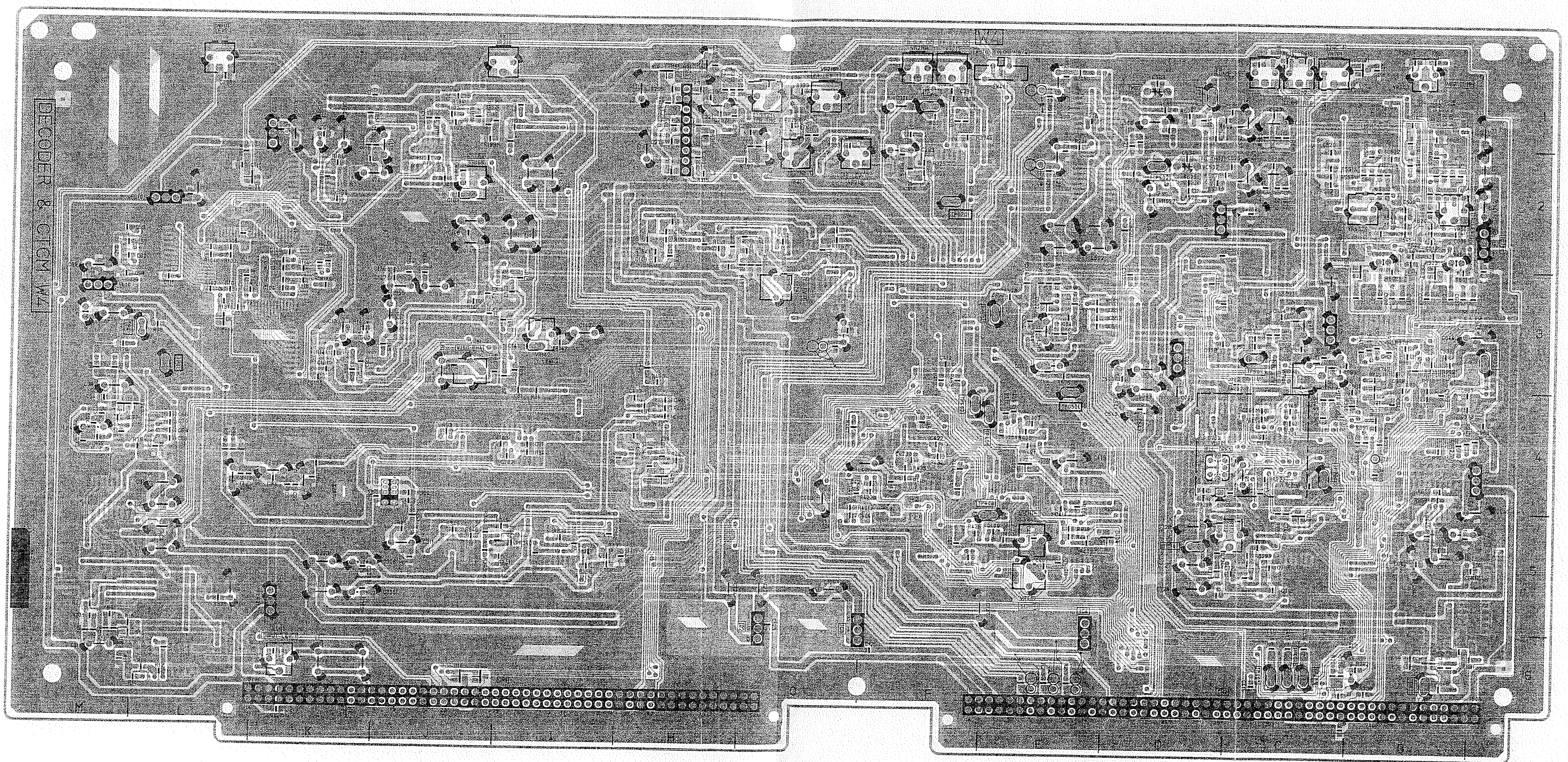
ADJUSTMENT	
VR1	K-6
VR81	J-3
VR141	G-3
VR142	I-3
VR165	J-2
VR212	G-2
VR213	G-2
VR214	G-1
VR215	G-1
VR216	F-1
VR217	F-1
VR218	J-1
VR219	L-1
VR401	E-5
VR402	E-5
VR501	B-2
VR502	B-2
VR503	B-1
VR601	C-1
VR602	C-1
VR701	C-1
VR702	C-5
VR906	C-3
VC141	H-3
VC401	F-4
VC501	D-1
VC502	D-2

CONNECTOR	
CN1	I-6
CN2	C-6

ADDRESS INFORMATION

CHIP PART INFORMATION


B
C
E
(SILK)
B
C
E
(CHIP PART)


DECODER & CTCM W4
W2

(FOIL SIDE)

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP83199B	P.C.BOARD W/COMPONENT	1	(RTL)<R>
			W4 DEC & CTCM		
			CAPACITORS		
C1,C2		ECEA0JN221S	E.CAPACITOR 6.3V 220U	2	
C3,C4		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C5		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C6,C7		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	2	
C8		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C9		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C10		ECEA1EN4R7S	E.CAPACITOR 25V 4.7U	1	
C11		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C52		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C53		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C56		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C57-59		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	3	
C60		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C64		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C66		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C67,68		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	2	
C69		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C70		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C72		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C73		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C74		ECUM1H040DCN	C.CAPACITOR CH 50V 4P	1	
C75		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C76,77		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	2	
C78		ECEA1EN4R7S	E.CAPACITOR 25V 4.7U	1	
C81		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C82		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C83		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C91		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C92		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C93		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C94		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C97		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C101		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C102-09		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	8	
C110		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C111		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C120		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C121		ECEA1CGE470	E.CAPACITOR 16V 47U	1	
C123		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C124		ECEA1AGE101	E.CAPACITOR 10V 100U	1	
C125		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C126,27		ECEA1AGE101	E.CAPACITOR 10V 100U	2	
C130,31		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C132		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C133		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C134		ECEA1HU2R2	E.CAPACITOR 50V 2.2U	1	
C135		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C136		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C137		ECUM1H070DCN	C.CAPACITOR CH 50V 7P	1	
C138		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C139		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C140		ECEA0JN101S	E.CAPACITOR 6.3V 100U	1	
C141		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C142		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C143		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C144		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C145		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C146,47		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	2	
C148		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C149		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C150		ECUM1H050DCN	C.CAPACITOR CH 50V 5P	1	
C151		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C152		ECEA0JN101S	E.CAPACITOR 6.3V 100U	1	
C153		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C156		ECEA1HU2R2	E.CAPACITOR 50V 2.2U	1	
C157		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C158		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C159		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C160		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C161		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C162		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C163		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C164		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C165		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C166		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C174		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C175		ECUM1H070DCN	C.CAPACITOR CH 50V 7P	1	
C176		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C177		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C178		ECUM1H050DCN	C.CAPACITOR CH 50V 5P	1	
C201,02		ECEA0JN470S	E.CAPACITOR 6.3V 47U	2	
C250		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C264		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C273		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C275,76		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	2	
C280		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C284		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C286		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C287		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C288		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C289		ECUM1H040DCN	C.CAPACITOR CH 50V 4P	1	
C290		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C291		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C292		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C293		ECEA1HU4R7	E.CAPACITOR 50V 4.7U	1	
C294,95		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C296		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C297		ECUM1H040DCN	C.CAPACITOR CH 50V 4P	1	
C298		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C299		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C300		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C301		ECEA1HU4R7	E.CAPACITOR 50V 4.7U	1	
C302		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C304		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C305		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C306		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C307		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C308,09		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	2	
C310		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C311		ECEA1HNR47S	E.CAPACITOR CH 50V 0.47U	1	
C312		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C313		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C328		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C401		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C402,03		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	2	
C404		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C405		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C406		ECUM1H331JCN	C.CAPACITOR CH 50V 330P	1	
C408		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C409		ECUM1H121JCN	C.CAPACITOR CH 50V 120P	1	
C410		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C411		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C412		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C413		ECUM1H070DCN	C.CAPACITOR CH 50V 7P	1	
C415		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C419		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C421		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C422		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C423		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C430		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C431,32		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C433,34		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	2	
C435		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C436		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C501		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C502		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C503		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C504		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C505		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C506		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C507		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C509-11		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	3	
C513		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C516,17		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	2	
C520		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C521-23		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	3	
C525		ECUM1H390JCN	C.CAPACITOR CH 50V 39P	1	
C526		ECUM1H070DCN	C.CAPACITOR CH 50V 7P	1	
C527		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C528		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C529		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C533,34		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	2	
C536		ECUM1H390JCN	C.CAPACITOR CH 50V 39P	1	
C537		ECUM1H070DCN	C.CAPACITOR CH 50V 7P	1	
C538		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C540		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C541		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C542		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C543		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C544		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C545		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C546		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C547		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C548		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C549		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C550,51		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	2	
C552		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C553		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C554		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C555,56		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	2	
C558		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C559		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C601		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C603		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C605		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C606,07		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	2	
C616-18		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	3	
C620		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C639		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C640		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C642		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C643		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C645		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C646		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C647		ECUM1E104KBN	C.CAPACITOR CH 25V 0.1U	1	
C648		ECEA1HU2R2	E.CAPACITOR 50V 2.2U	1	
C657		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C659		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C661		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C679		ECUM1H390JCN	C.CAPACITOR CH 50V 39P	1	
C701		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C702		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C703		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C704		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C706		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C708		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C710		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C711		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C712		ECUM1H820JCN	C.CAPACITOR CH 50V 68P	1	
C714		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C715		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C716		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C717		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C718		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C721-24		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	4	
C726,27		ECEA1HN010SB	E.CAPACITOR 50V 1U	2	
C728		ECEA1EN4R7SB	E.CAPACITOR 25V 4.7U	1	
C729		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C731		ECUM1H070DCN	C.CAPACITOR CH 50V 7P	1	
C732		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C740		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C741		ECEA1CU470	E.CAPACITOR 16V 47U	1	
C742		ECEA1CU220	E.CAPACITOR 16V 22U	1	
C745,46		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	2	
C752		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C753		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C755		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	1	
C761		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C762		ECUM1H050DCN	C.CAPACITOR CH 50V 5P	1	
C763,64		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	2	
C782		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C903		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C904		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C938		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C939-41		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	3	
C944		ECEA0JU101	E.CAPACITOR 6.3V 100U	1	
C945,46		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C947		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C953		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C958		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C961		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C962		ECUM1H040DCN	C.CAPACITOR CH 50V 4P	1	
C963		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C966-68		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	3	
C973		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C986		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
CN1,N2		VJP3176B100	CONNECTOR (MALE)	2	
D61		MA151WK	DIODE	1	<R>
D101		MA151WA	DIODE	1	<R>
D102		MA151K	DIODE	1	<R>
D165,66		MA151WK	DIODE	2	<R>
D208		MA151K	DIODE	1	<R>
D401		MA151WA	DIODE	1	<R>
D404		MA151K	DIODE	1	<R>
D405		MA151WA	DIODE	1	<R>
D502		MA151WK	DIODE	1	<R>
D603		MA704	DIODE	1	<R>
D607		MA704	DIODE	1	<R>
D701		MA151K	DIODE	1	<R>
D706		MA335-R	DIODE	1	<R>
D710		MA151WA	DIODE	1	<R>
FL1		VLF0932	FILTER	1	
FL10		VLF0576	FILTER	1	
FL101,02		VLF0576	FILTER	2	
FL141		VLF0932	FILTER	1	
FL401		VLF0576	FILTER	1	
FL603		VLF0576	FILTER	1	
FL605		VLF1043	FILTER	1	
FL607		VLF0576	FILTER	1	
FL701,02		VLF0576	FILTER	2	
IC1		MC14053BF	IC	1	<R>
IC2		AN78M05	IC	1	<R>
IC3		AN79M05	IC	1	<R>
IC4		AN78M05	IC	1	<R>
IC10		AN91A12S	IC	1	<R>
IC11		MB40568PF	IC	1	<R>
IC91		MC74HC74AF	IC	1	<R>
IC101		CXD2105AQ	IC	1	<R>
IC102,03		MB40778PF	IC	2	<R>
IC141		TC4W53F	IC	1	<R>
IC142		MC14053BF	IC	1	<R>
IC144		MC14053BF	IC	1	<R>
IC165		MC14053BF	IC	1	<R>
IC212		MC14053BF	IC	1	<R>
IC214		AN6041	IC	1	<R>
IC215,16		MC14053BF	IC	2	<R>
IC217		NJM082BM	IC	1	<R>
IC218		MC14053BF	IC	1	<R>
IC219,20		NJM082BM	IC	2	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC401		MM74HC221AM	IC	1	<R>
IC402		SN74LS221NS	IC	1	<R>
IC403		UPD65013BC16	IC	1	<R>
IC404		MC74HC04AF	IC	1	<R>
IC405		MM74HC221AM	IC	1	<R>
IC406		MC74HC00AF	IC	1	<R>
IC408		MC14538BF	IC	1	<R>
IC409		NJM319M	IC	1	<R>
IC410		MC14528BF	IC	1	<R>
IC411		TC4W53F	IC	1	<R>
IC501		NJM082BM	IC	1	<R>
IC505		AN91A12S	IC	1	<R>
IC601,02		MB40568PF	IC	2	<R>
IC606		MB40778PF	IC	1	<R>
IC700		AN78L09	IC	1	<R>
IC703		SN74LS221NS	IC	1	<R>
IC705		MC74HC74AF	IC	1	<R>
IC706		NJM082BM	IC	1	<R>
IC707		TC4W53F	IC	1	<R>
IC709		MC74HC00AF	IC	1	<R>
IC710		SN74LS221NS	IC	1	<R>
IC712		TC4S584F	IC	1	<R>
IC714		MC74HC163AF	IC	1	<R>
IC781		SN74LS221NS	IC	1	<R>
IC901		TC4W53F	IC	1	<R>
IC909		CF45073P	IC	1	<R>
L1,L2		VLQEL05S101K	COIL 100UH	2	
L4		VLP0017	COIL	1	
L64		VLQEL05S221J	COIL 220UH	1	
L81		VLQEL05S470J	COIL 47UH	1	
L91,92		VLQEL05S2R7J	COIL 2.7UH	2	
L93		VLQEL05S151J	COIL 150UH	1	
L154		VLQEL05S150J	COIL 15UH	1	
L155		VLQEL05S180J	COIL 18UH	1	
L156,57		VLQEL05S101K	COIL 100UH	2	
L172,73		VLQEL05S101K	COIL 100UH	2	
L174		VLQEL05S150J	COIL 15UH	1	
L175		VLQEL05S180J	COIL 18UH	1	
L220,21		VLQEL05S560J	COIL 56UH	2	
L222,23		VLQEL05S101K	COIL 100UH	2	
L401		VLQEL05S470J	COIL 47UH	1	
L501,02		VLQEL05S101K	COIL 100UH	2	
L503		VLQEL05S180J	COIL 18UH	1	
L504		VLQEL05S820J	COIL 82UH	1	
L505		VLQEL05S680J	COIL 68UH	1	
L506		VLQEL05S180J	COIL 18UH	1	
L507		VLQEL05S820J	COIL 82UH	1	
L508		VLQEL05S680J	COIL 68UH	1	
L509-11		VLQEL05S101K	COIL 100UH	3	
L513		VLQEL05S221J	COIL 220UH	1	
L601,02		VLP0017	COIL	2	
L705		VLQEL05S3R3J	COIL 3.3UH	1	
L707		VLQEL05S560J	COIL 56UH	1	
L910		VLQEL05S470J	COIL 47UH	1	
Q2		2SB709-R	TRANSISTOR	1	<R>
Q3		2SD601-R	TRANSISTOR	1	<R>
Q16		2SD601-R	TRANSISTOR	1	<R>
Q17,18		2SC2295-B	TRANSISTOR	2	<R>
Q19,20		2SA1022-B	TRANSISTOR	2	<R>
Q21		2SC2295-B	TRANSISTOR	1	<R>
Q23		2SD601-R	TRANSISTOR	1	<R>
Q24		2SB709-R	TRANSISTOR	1	<R>
Q25		2SD601-R	TRANSISTOR	1	<R>
Q26		2SA1022-B	TRANSISTOR	1	<R>
Q81		2SD601-R	TRANSISTOR	1	<R>
Q82		2SB709-R	TRANSISTOR	1	<R>
Q91		2SB709-R	TRANSISTOR	1	<R>
Q101		2SA1022-B	TRANSISTOR	1	<R>
Q141-43		2SD601-R	TRANSISTOR	3	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q146,47		2SB709-R	TRANSISTOR	2	<R>
Q148		2SD601-R	TRANSISTOR	1	<R>
Q149,50		2SC2295-B	TRANSISTOR	2	<R>
Q151		2SA1022-B	TRANSISTOR	1	<R>
Q152		2SD601-R	TRANSISTOR	1	<R>
Q153		2SC2295-B	TRANSISTOR	1	<R>
Q154		2SB709-R	TRANSISTOR	1	<R>
Q160		2SB709-R	TRANSISTOR	1	<R>
Q161		2SD601-R	TRANSISTOR	1	<R>
Q162,63		2SC2295-B	TRANSISTOR	2	<R>
Q164		2SA1022-B	TRANSISTOR	1	<R>
Q165		2SD601-R	TRANSISTOR	1	<R>
Q201		2SB709-R	TRANSISTOR	1	<R>
Q202,03		2SD601-R	TRANSISTOR	2	<R>
Q204		2SB709-R	TRANSISTOR	1	<R>
Q230		2SB709-R	TRANSISTOR	1	<R>
Q231,32		2SD601-R	TRANSISTOR	2	<R>
Q233		2SC2404	TRANSISTOR	1	<R>
Q234		2SB709-R	TRANSISTOR	1	<R>
Q235,36		2SD601-R	TRANSISTOR	2	<R>
Q237		2SC2404	TRANSISTOR	1	<R>
Q238		2SD601-R	TRANSISTOR	1	<R>
Q240		UN2213	TRANSISTOR	1	<R>
Q241		2SD601-R	TRANSISTOR	1	<R>
Q243		2SD601-R	TRANSISTOR	1	<R>
Q402		2SD601-R	TRANSISTOR	1	<R>
Q501,02		2SB709-R	TRANSISTOR	2	<R>
Q503,04		2SC2295-B	TRANSISTOR	2	<R>
Q505		2SA1022-B	TRANSISTOR	1	<R>
Q506		2SC2295-B	TRANSISTOR	1	<R>
Q507		2SK374-R	TRANSISTOR	1	<R>
Q509,10		2SB709-R	TRANSISTOR	2	<R>
Q511,12		2SC2295-B	TRANSISTOR	2	<R>
Q513		2SA1022-B	TRANSISTOR	1	<R>
Q514		2SC2295-B	TRANSISTOR	1	<R>
Q515		2SK374-R	TRANSISTOR	1	<R>
Q516,17		2SD601-R	TRANSISTOR	2	<R>
Q518		2SB709-R	TRANSISTOR	1	<R>
Q525		2SA1022-B	TRANSISTOR	1	<R>
Q601		2SB709-R	TRANSISTOR	1	<R>
Q604-06		2SD601-R	TRANSISTOR	3	<R>
Q705		2SC2295-B	TRANSISTOR	1	<R>
Q707		2SC3757-R	TRANSISTOR	1	<R>
Q708,09		2SA1226	TRANSISTOR	2	<R>
Q710		2SC3757-R	TRANSISTOR	1	<R>
Q711		2SB709-R	TRANSISTOR	1	<R>
Q910-12		2SD601-R	TRANSISTOR	3	<R>
QR401		UN2213	TRANSISTOR	1	<R>
QR501,02		UN2213	TRANSISTOR	2	<R>
QR712,13		UN2213	TRANSISTOR	2	<R>
			RESISTORS		
R1		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R2		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R3		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R4,R5		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	2	
R10,11		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	2	
R12		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R14		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R16		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R17,18		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	2	
R19		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R20		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R21		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R22		ERJ6GEYJ150	M.RESISTOR CH1/10W 15	1	
R23		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R24		ERJ6GEYJ150	M.RESISTOR CH1/10W 15	1	
R25		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R26		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R27		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R28		ERJ6GEYJ150	M.RESISTOR CH1/10W 15	1	
R29		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R30,31		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	2	
R32		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R33		ERJ6GEYJ150	M.RESISTOR CH1/10W 15	1	
R36		ERDS2TJ153	C.RESISTOR 1/4W 15K	1	
R34		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R35		ERJ6GEYJ683	M.RESISTOR CH1/10W 68K	1	
R37		ERJ6GEYJ471	M.RESISTOR CH1/10W 470	1	
R38		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R39		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R67		ERJ6GEYJ105	M.RESISTOR CH1/10W 1M	1	
R68		ERJ6GEYJ684	M.RESISTOR CH1/10W 680K	1	
R69		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R70,71		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	2	
R72		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R73		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R74		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R75		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R76		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R77		ERJ6GEYG151	M.RESISTOR CH1/10W 150	1	
R78		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R79,80		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	2	
R81		ERJ6GEYJ153	M.RESISTOR CH1/10W 15K	1	
R82		ERJ6GEYJ821	M.RESISTOR CH1/10W 820	1	
R83		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R84		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R85		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R86		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R87		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R88,89		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	2	
R93		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R94		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R95		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R96		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R97		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R98		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R99		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R101		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R103		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R106		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R108		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R113		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R114		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R115,16		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	2	
R117		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R118		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R121		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R131		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R134		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R135		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R136		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R139		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R141		VRE0034E222	M.RESISTOR CH 1/10W 2.2K	1	
R142		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R143		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R144		ERJ6GEYJ122	M.RESISTOR CH1/10W 1.2K	1	
R145		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R146		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R147		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R148		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R149		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R150		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R151		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R152,53		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	2	
R154		ERJ6GEYJ182	M.RESISTOR CH1/10W 1.8K	1	
R155		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R156		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R157		ERJ6GEYJ471	M.RESISTOR CH1/10W 470	1	
R158		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R159		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R160		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R161		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R162		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R163		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R164		ERJ6GEYJ681	M.RESISTOR CH1/10W 680	1	
R165		ERJ6GEYJ471	M.RESISTOR CH1/10W 470	1	
R166		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R167		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R168		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R169		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R170		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R171		ERJ6GEYJ333	M.RESISTOR CH1/10W 33K	1	
R172		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R173		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R174		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R175,76		ERJ6GEYJ330	M.RESISTOR CH1/10W 33	2	
R177		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R178		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R179		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R180		VRE0034E222	M.RESISTOR CH 1/10W 2.2K	1	
R181		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R182		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R183,84		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	2	
R185		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R186		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R187		ERJ6GEYJ471	M.RESISTOR CH1/10W 470	1	
R189		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R190		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R191		ERJ6GEYJ564	M.RESISTOR CH1/10W 560K	1	
R192		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R193		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R194		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R195,96		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	2	
R197		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R198,99		ERJ6GEYJ471	M.RESISTOR CH1/10W 470	2	
R200		ERJ6GEYJ272	M.RESISTOR CH1/10W 2.7K	1	
R201		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R202		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R203		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R204		ERJ6GEYJ330	M.RESISTOR CH1/10W 33	1	
R205		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R206		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R209		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R210		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R211		ERJ6GEYJ330	M.RESISTOR CH1/10W 33	1	
R212		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R213-16		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	4	
R219		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R220		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R221		ERJ6GEYJ330	M.RESISTOR CH1/10W 33	1	
R295,96		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	2	
R297		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R298		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R299,00		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	2	
R301		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R302		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R303		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R304		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R305		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R306		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R307		ERJ6GEYJ153	M.RESISTOR CH1/10W 15K	1	
R308		ERJ6GEYG680	M.RESISTOR CH1/10W 68	1	
R309		ERJ6GEYJ105	M.RESISTOR CH1/10W 1M	1	
R310,11		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	2	
R315,16		ERJ6GEYJ681	M.RESISTOR CH1/10W 680	2	
R317		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R318		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R319		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R320		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R321		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R322		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R323		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R324		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R325		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R326		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R327		ERJ6GEYJ153	M.RESISTOR CH1/10W 15K	1	
R328		ERJ6GEYG680	M.RESISTOR CH1/10W 68	1	
R330		ERJ6GEYJ105	M.RESISTOR CH1/10W 1M	1	
R331,32		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R335		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R336		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R337		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R338,39		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	2	
R340		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R341		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R342-44		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	3	
R345		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R346		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R347		ERJ6GEYJ334	M.RESISTOR CH1/10W 330K	1	
R348-50		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	3	
R351		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R353		ERJ6GEYJ471	M.RESISTOR CH1/10W 470	1	
R354		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R356		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R357		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R359		ERJ6GEYJ105	M.RESISTOR CH1/10W 1M	1	
R374		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R401		ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	1	
R402		ERJ6GEYJ153	M.RESISTOR CH1/10W 15K	1	
R403		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R404		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R405		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R406		ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R411		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R412		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R414		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R416		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R417		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R420		ERDS2TJ473	C.RESISTOR 1/4W 47K	1	
R421		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R422		ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	1	
R425		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R427		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R432		ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	1	
R433		ERJ6GEYJ393	M.RESISTOR CH1/10W 39K	1	
R437		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R439		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R440		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R441		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R445		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R451		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R452		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R453		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R460		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R461		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R462		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R463,64		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	2	
R465		ERJ6GEYJ105	M.RESISTOR CH1/10W 1M	1	
R466		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R467		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R468		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R469		ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R501		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R502		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R503		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R504		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R505		VRE0034E102	M.RESISTOR CH 1/10W 1K	1	
R506		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R507		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R508		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R509,10		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	2	
R511		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R512		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R513		VRE006606472	M.RESISTOR CH 1/10W 4.7K	1	
R514		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R515		ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	1	
R516		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R517,18		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	2	
R519		ERJ6GEYJ154	M.RESISTOR CH1/10W 150K	1	
R520		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R521		ERJ6GEYJ331	M.RESISTOR CH1/10W 330	1	
R522		ERJ6GEYK475	M.RESISTOR CH1/10W 4.7M	1	
R523		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R524		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R525		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R526		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R527		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R528		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R529		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R530		ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R531		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R532		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R533		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R535		VRE006606472	M.RESISTOR CH 1/10W 4.7K	1	
R536		ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	1	
R538		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R539		VRE0034E102	M.RESISTOR CH 1/10W 1K	1	
R540		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R541		ERJ6GEYJ154	M.RESISTOR CH1/10W 150K	1	
R543		ERJ6GEYJ331	M.RESISTOR CH1/10W 330	1	
R544		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R545		ERJ6GEYK475	M.RESISTOR CH1/10W 4.7M	1	
R546		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R547		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R549		ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R550		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R551,52		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	2	
R553		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R554		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R555		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R556		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R559		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R560		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R561		ERJ6GEYJ273	M.RESISTOR CH1/10W 27K	1	
R562		ERJ6GEYJ153	M.RESISTOR CH1/10W 15K	1	
R571		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R572		ERJ6GEYJ271	M.RESISTOR CH1/10W 270	1	
R573		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R574		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R575		ERJ6GEYJ330	M.RESISTOR CH1/10W 33	1	
R576		ERJ6GEYJ105	M.RESISTOR CH1/10W 1M	1	
R577		ERJ6GEYJ684	M.RESISTOR CH1/10W 680K	1	
R578		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R579		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R580		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R581-83		ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	3	
R584		ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R585		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R589		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R593		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R601,02		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	2	
R614		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R615		VRE0034E223	M.RESISTOR CH 1/10W 22K	1	
R616		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R617		VRE0034E223	M.RESISTOR CH 1/10W 22K	1	
R621		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R622		ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R623,24		VRE0034E471	M.RESISTOR CH 1/10W 470	2	
R625		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R631		ERJ6GEYJ101	M.RESISTOR CH1/10W 100	1	
R632		ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R633		ERJ6GEYJ272	M.RESISTOR CH1/10W 2.7K	1	
R635		VRE0034E681	M.RESISTOR CH 1/10W 680	1	
R636		VRE0034E152	M.RESISTOR CH 1/10W 1.5K	1	
R638		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R648		ERJ6GEYJ330	M.RESISTOR CH1/10W 33	1	
R656		ERJ6GEYJ221	M.RESISTOR CH1/10W 220	1	
R658		VRE0034E222	M.RESISTOR CH 1/10W 2.2K	1	
R659		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R660-67		ERJ6GEYJ331	M.RESISTOR CH1/10W 330	8	
R701		ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R702		ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R703		ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R704		ERJ6GEYJ683	M.RESISTOR CH1/10W 68K	1	
R705		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R706,07		ERJ6GEYJ562	M.RESISTOR CH1/10W 5.6K	2	
R708		ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R709		ERJ6GEYJ153	M.RESISTOR CH1/10W 15K	1	
R710		ERJ6GEYJ681	M.RESISTOR CH1/10W 680	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R712	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R713	ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R719	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R721	ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R722	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R730	ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R731	ERJ6GEYJ393	M.RESISTOR CH1/10W 39K	1	
R732	ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	1	
R738	ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R742	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R743	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R751	ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R752	ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R753,54	ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	2	
R755,56	ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	2	
R761	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R762	ERJ6GEYJ123	M.RESISTOR CH1/10W 12K	1	
R763,64	ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	2	
R765	ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R766	ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R770,71	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	2	
R783	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R901	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R902	ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	1	
R921	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R922	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R926	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R927	ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R932	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R933	ERJ6GEYG680	M.RESISTOR CH1/10W 68	1	
R934	ERJ6GEYJ562	M.RESISTOR CH1/10W 5.6K	1	
R935	ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R936	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R938,39	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	2	
R942-44	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	3	
R945	ERJ6GEYJ152	M.RESISTOR CH1/10W 1.5K	1	
R946	ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R947	ERJ6GEYJ122	M.RESISTOR CH1/10W 1.2K	1	
R950	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	1	
R951	ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R952	ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R953	ERJ6GEYJ684	M.RESISTOR CH1/10W 680K	1	
R980	ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R981,82	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	2	
R984	ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R997	ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	1	
R999	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
SW401	VSS0283	SWITCH	1	<R>
VC141	VCV0050	TRIMMER	1	
VC401	VCV0050	TRIMMER	1	
VC501,02	VCV0031	TRIMMER	2	
VL701	VLQ0415	COIL	1	
VR1	EVMEASA00B13	V.RESISTOR 1K	1	
VR81	EVMEASA00B13	V.RESISTOR 1K	1	
VR141,42	EVMEASA00B23	V.RESISTOR 2K	2	
VR165	EVMEASA00B23	V.RESISTOR 2K	1	
VR212-15	EVMEGSA00B13	V.RESISTOR 1K	4	
VR216,17	EVMEGSA00B14	V.RESISTOR 10K	2	
VR218	EVMEGSA00B53	V.RESISTOR 5K	1	
VR219	EVMEGSA00B14	V.RESISTOR 10K	1	
VR401,02	EVMEASA00B13	V.RESISTOR 1K	2	
VR501,02	EVMEGSA00B23	V.RESISTOR 2K	2	
VR503	EVMEASA00B53	V.RESISTOR 5K	1	
VR601,02	EVMEGSA00B14	V.RESISTOR 10K	2	
VR701	EVMEGSA00B23	V.RESISTOR 2K	1	
VR702	EVMEASA00B53	V.RESISTOR 5K	1	
VR906	EVMEASA00B53	V.RESISTOR 5K	1	
X201	VSX0270	CRYSTAL OSCILLATOR	1	<R>
		MISCELLANEOUS		
	VML2143	CARD PULLER	1	
	VML2144	CARD PULLER	1	
	VMZ1547	BARRIER	1	
	VXA3966	P.C.B. SHIELD PLATE	1	
	XYNV3+K6FR	SCREW	5	

Order No. VSD9609S501

Technical Bulletin

Supplement to the Service Manual

M II Video Product

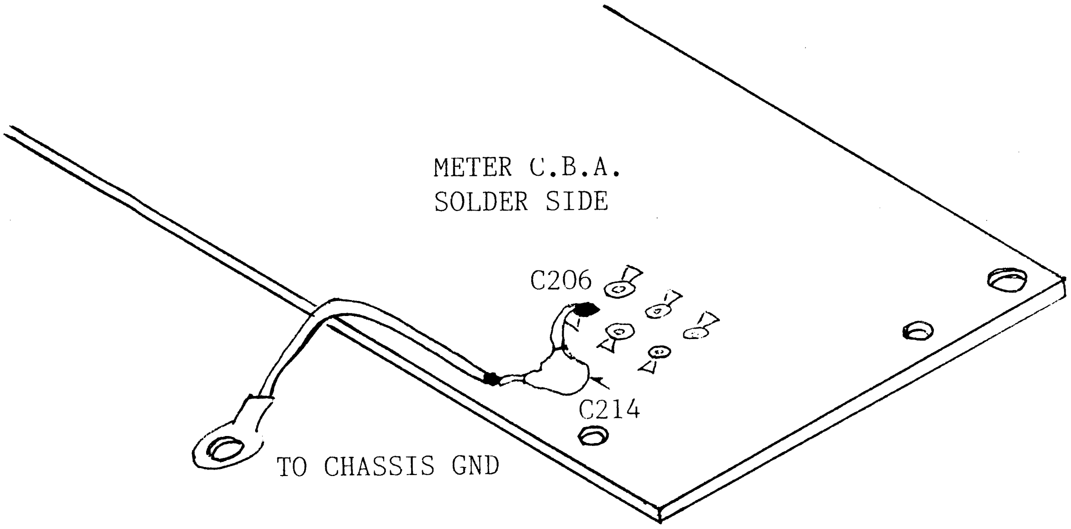
Subject : Improvement of Signal and Noise Ratio at Headphones Outputs

Please use this supplement together with the Service Manual(s) and model(s) (n) as follows :

	Model No.	Bulletin	Order No.	Effective from		Model No.	Bulletin	Order No.	Effective from
☐	AU-65-E		VQS0264		☐	AU-665-E		VQS0270	
☐	AU-63-E		VQS0264		☐	AU-55HE		VSD9304M503	
☐	AU-62-E		VQS0264		☐	AU-45HE		VSD9304M504	
☐	AU-65HE		VSD9204M501		■	AU-W35HE	27	VSD9406M506A/B	F6-----
☐	AU-63HE		VSD9204M501		■	AU-W33HE	24	VSD9406M506A/B	F6-----
☐	AU-62HE		VSD9204M501		■	AU-W32HE	25	VSD9406M506A/B	F6-----
☐	AU-66HE		VSD9208M502		☐	COMMON		-------	

Board : METER

In order to improve the signal and noise ratio at the headphone output, C214 has been added between chassis ground and the ground side of C206 as shown below.



Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.
B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.
D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Others

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C214	-------	ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	E	

HE-4789

Panasonic

© 1996 Matsushita Electric Industrial Co., Ltd. All rights reserved.
Unauthorized copying and distribution is a violation of law.